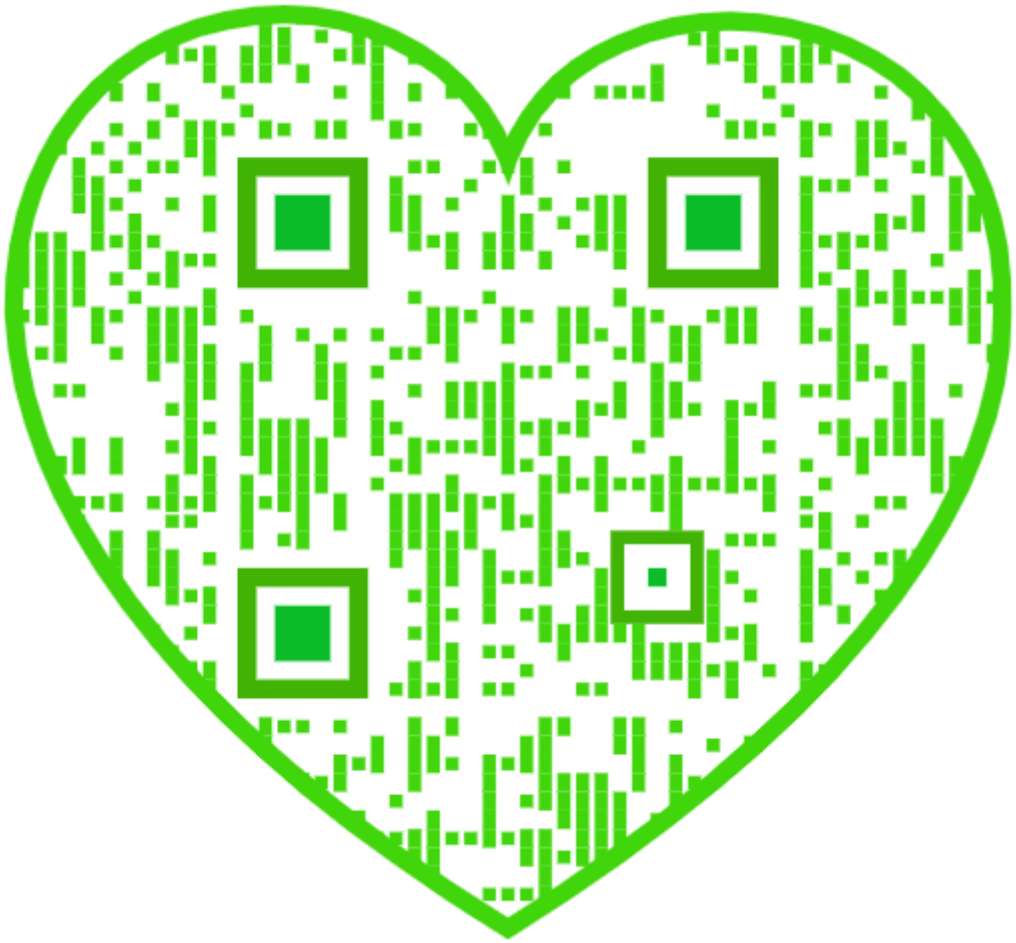

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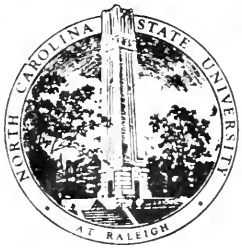

This book was presented by

Mr. & Mrs. Thomas Littleton

MANUAL

OF THE

MEDICAL BOTANY

OF THE

UNITED STATES;

CONTAINING

A DESCRIPTION OF FIFTY-TWO MEDICAL PLANTS, WITH THEIR NAMES, QUALITIES, PROPERTIES, HISTORY, &c.

WITH

REMARKS ON NEARLY 500 SUBSTITUTES

AND

FIFTY-TWO COLOURED PLATES.

BY PROFESSOR RAFINESQUE, A. M.

PHILADELPHIA:

1841.

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INTRODUCTION.

1. The Science of Botany was at all times intimately connected with medical knowledge.

2. Several ancient nations, such as the Grecians, Romans, Hindoos, Chinese, &c. considered Medical Botany as equivalent to both botanical and medical knowledge.

3. Medicine was then, and is still among rude nations, nothing more than the application of an empirical knowledge of vegetable substances.

4. Thence the usual vulgar division of Plants, into the five great Classes of Aliments, Simples, Poisons, Flowers and Weeds, or alimentary, medical, poisonous, ornamental and useless plants.

5. At the revival of learning in Europe, this notion being general, the first works on Botany, were of course mere sketches of Medical Botany, and comments on Grecian or Roman writers.

6. When Tournefort and Linnæus, about a century ago, became botanical reformers, and made Botany a separate Science, their efforts and improvements were resisted by those who at all times contend against useful innovations.

7. Linnæus in his Materia Medica, gave a model of systematical Medical Botany, equally concise, perspicuous and accurate; but destitute of the help of figures.

8. This model was followed by Schoepf in his Materia Medica of North America, the first general work on our medical plants, published in Germany and in Latin towards 1787. This small work of Schoepf has never been translated nor republished in America, although highly deserving of it.

9. When America was settled, the native tribes were in possession of many valuable vegetable remedies, discovered by long experience, the knowledge of which they gradually imparted to their neighbours.

10. This knowledge partly adopted even as far as Europe, and partly rejected by medical skepticks, became scattered through our country in the hands of country practitioners, Herbalists, Empirics and Botanists.

11. Schoepf collected his materials from them, and noticed about three hundred and sixty plants as medical; but he did not go every where, nor exhaust the subject, since nearly double that number are actually in common use in different States of the Union.

12. Since the United States have become an independent and flourishing nation, much has been done to teach and spread correct medical knowledge.

13. The establishment of Medical Schools, Chairs of Materia Medica, of Medical and Systematical Botany, Medical and Botanic Gardens, Infirmaries, Hospitals, have largely

contributed to impart Medical and Botanical knowledge, through the professional class.

14. This purpose has been aided by numerous publications of learned Physicians and Botanists, Medical Works, Pamphlets and Journals, Pharmacopeias, Dispensatories, Inaugural Theses, &c.

15. Notwithstanding all these means, it is a positive and deplorable fact, that but few medical practitioners, apply themselves to the Study of Botany, and therefore are deprived of the aid of comparative Medical Botany.

16. It is not less certain, but still more deplorable that beyond the immediate sphere of medical knowledge, the majority of the people are yet in prey to medical credulity, superstition and delusions, in which they are confirmed by the repeated failures of Theorists, and the occasional success of Empirical Rivals.

17. Even in large cities and in the centre of medical light, Empirics are thriving, because they avail themselves of the resources afforded by active plants, often neglected or unknown to the regular practitioners.

18. It is not perhaps so well known that there are in this Age and in the United States, American *Marabouts* who like the *Marabouts* of the wilds of Africa, attempt in some remote places, to cure diseases by charms, prayers, blowing, spitting, &c.

19. It is therefore needful to spread still further correct medical knowledge; and the state of medical science is such in the United States, as to require a greater diffusion of the

acquired knowledge, aided by freedom of enquiry, liberal views, and mutual forbearance.

20. The practice of medicine is now exercised in the United States by three sets of men or Classes of Practitioners. 1. The RATIONALS, 2. the THEORISTS, and 3. the EMPIRICS.

21. The RATIONAL medical men are liberal and modest, learned or well informed, neither intolerant nor deceitful, and ready to learn or impart information. They comprise the *Improvers*, *Eclectics*, and *Experimentalists*.

22. The *Improvers* study nature and the human frame, write their observations, and improve medical knowledge.

23. The *Eclectics* are those who select and adopt in practice, whatever is found most beneficial, and who change their prescriptions according to emergencies, circumstances and acquired knowledge.

24. While the *Experimentalists* are those who are directed by experience and experiments, observations, dissections and facts.

25. But the THEORISTS are often illiberal, intolerant, proud and conceited; they follow a peculiar theory and mode of practice, with little deviation, employing but few vegetable remedies, and enlisting under the banner of a teacher or sect.

26. They are divided into many Sects, always at war among themselves and their rivals: such are the *Brownists*, *Galenists*, *Mesmerians*, *Skepticks*, *Chemicalists*, *Calomelists*, *Entomists*, &c.

27. The EMPIRICS are commonly illiterate, ignorant, deceitful and reserved: they follow a

secret or absurd mode of practice, or deal in patent remedies.

28. They include the *Herbalists*, vulgarly called *Indian* or *Root Doctors*, and the *Steam Doctors*, who follow the old practice of the natives, the *Quacks* or dealers in Nostrums, the *Patent Doctors*, the *Prescribers* of receipts, the *Marabouts*, &c.

29. All these classes need instruction on the natural knowledge of medical substances, and it ought to be afforded to them, that they may become properly acquainted with those which they employ or may avail themselves of.

30. Medical Sciences have lately been widely enlarged, by borrowing the help of all the Natural Sciences; and the enlightened physicians begin to avail themselves of all the materials they can command, rendering all the Sciences subservient or auxiliaries to their pursuits.

31. By Botany, the great majority of medical Substances are ascertained and become available: while the study of natural affinities enables to detect and compare botanical and medical Equivalents.

32. Medical Botany teaching to know and appreciate the greatest number of articles employed in Materia Medica, is become indispensable to the enlightened physician.

33. Vegetable Chemistry analyses vegetable substances, discovers their active principles, relative medical value, and ascertains the equivalent or incompatible substances.

34. Even Pharmacy is become a science, by the aid of Botany and Chemistry. Druggists and Pharmacians who sell vegetable Articles or

Drugs ought to be botanically acquainted with them, so as to distinguish the genuine kinds, and detect the frauds or blunders of the collectors and herbalists.

35. Works on Medical Botany are of two kinds, with or without figures. This last kind includes all the *Materia Medicas*, *Dispensatories*, *Pharmacologies*, *Pharmacopeias*, &c. which try to convey the knowledge of medical substances by mere descriptions.

36. The other kind, and the most useful, employ, Iconography or figures, besides descriptive references, to give a complete knowledge of the officinal plants: such are the *Herbals*, *Medical Botanies*, *Medical Floras*, &c.

37. A Critical List shall be given of such Works or Essays relating to our Plants, which have been consulted: but the three principal works with figures, deserve perhaps a separate notice.

38. Bigelow and W. Barton published some years ago, and towards the same time, two voluminous and expensive Works on Medical Botany. Barton's Work in two volumes quarto, contains only fifty plants and figures, and Bigelow's sixty in three volumes quarto.

39. Several plants are described and figured in both works, reducing the total number of medical plants given to about eighty, for which the price is about forty dollars or half a dollar for every plant.

40. These imperfect and costly works have each their merit, and although not free from errors and omissions, are useful assistants to those who can afford to buy them. Bigelow's

is the most learned, accurate and useful, while Barton's has often the best figures.

41. It is to be regretted that these authors by following the expensive plan of Woodville's Medical Botany have lessened their utility and public circulation.

42. Some years before the above publications, a herbalist or spurious Botanist, Samuel Henry, printed in New York, 1814, a Medical Herbal, comprising in one octavo volume of five dollars, about one hundred sixty medical plants, with small fictitious figures.

43. This Work is merely mentioned here to warn against it. It is a worthless book, with incorrect names, wrong descriptions, erroneous indications, and figures mostly fictitious or misapplied. It is of no medical nor botanical account; yet it contains some of the Empirical concealed knowledge, available in a few instances.

44. Works of general utility ought to be accurate, complete, portable and cheap. Such alone can spread the required correct knowledge, and suit every class of readers.

45. The popular knowledge of the natural sciences has been prevented in the United States, by the first works published on them, having followed the model of the splendid European publications intended for the wealthy or public libraries.

46. It is time that we should return to the pristine Linnean simplicity, and by the addition of cheap but correct figures of objects, engraved on copper, zinc, pewter, stone or wood, speak to the eyes as well as the mind.

47. Such is the aim of the actual work, which is intended as a portable manual of Medical Botany, for the daily use of medical Students, Physicians, Druggists, Pharmacians, Chemists, Botanists, Florists, Herbalists, Collectors of herbs, heads of families, Infirmaries, &c.

48. It was many years in contemplation, and publicly proposed ever since 1816. It is now offered to the public, as a humble attempt to render one of the popular branches of medical and natural science, attainable and available by all.

49. The author has been collecting his materials for many years, while travelling through fourteen states of the Union, and lecturing on medical plants in Transylvania University.

50. His qualifications for the task result from fifteen years of botanical and medical observations and researches, and 8000 miles of botanical travels, wherein he diligently enquired and elicited from the learned and the illiterate, the result of their practical experience.

51. He has never despised knowledge because imparted by an uncouth mouth, and has often made experiments on himself and others to test peculiar facts.

52. Several Physicians and Botanists in Philadelphia, Baltimore, Washington City, Wilmington, Winchester, Alexandria, Bethlehem, Pittsburg, Wheeling, Lexington, Bowling-green, Sandusky, &c. have at different times communicated to him additional facts, or confirmed the properties of some plants.

53. He feels particularly indebted to the obliging kindness of several friends for many im-

portant facts or valuable communications, for which he feels happy to tender this public testimony of gratitude.

54. They are Dr. Mease, and Z. Collins of Philadelphia.

Drs. Short and Brown of Lexington.
Dr. Eoff of Wheeling.
Dr. Muller of New Harmony.
Dr. Drake of Cincinnati.
Dr. Crockett of Frankfort.
Dr. Graham of Harrodsburg.
Dr. Mac Williams of Washington City.
Dr. Hales of Troy.
Dr. Lawrence of New Lebanon.
Drs. L. Beck and Tully of Albany.
Drs. Mitchell and Torrey of New York.

55. It has been ascertained that there are nearly six hundred medical plants actually known and used as such in the United States: many of which are merely medical equivalents.

56. This number being too great for the purpose of a manual, one hundred and five of the most active and efficient medical TYPES have been selected, figured and described.

57. The others have been referred to these as substitutes or *succedanea*, when they possess nearly the same ostensible qualities and properties. In fact they are mostly used for each other throughout the country.

58. Those selected include all the species of Bigelow and W. Barton, with twenty-five additional species. It had been advised to reduce the whole number to fifty active plants; but such a reduction would have left out many va-

luable plants and not offered a sufficient quantity of generic TYPES or typical Equivalents.

59. When a Genus contains several medical species, only one is figured, unless their properties are quite different, and the others are mentioned with some remarks as equivalent substitutes. The plants of genera not figured are inserted in the general table or appendix.

60. The Botanical alphabetic order has been adopted, as the most easy, obvious and serviceable, since no scientific arrangement could have been equally available.

61. The medical arrangements are as numerous as the writers on Materia Medica. Every plant having commonly many properties, cannot be classed into any definite medical order, but should belong to several at the same time.

62. The defective and indelicate sexual system of Linnæus is now too obsolete for the state of the science.

63. The natural method would have been preferred, if the novelty of the attempt had not been anticipated as an obstacle to practical use.

64. Most of the figures have been drawn by the author, and a few reduced from Bigelow or Barton; they have been engraved and printed in a style suited to the assumed purpose.

65. For the sake of perspicuity and convenience every article is divided into sections. The names are at the head, and the Botanical name is the first.

66. The English, French and German names are given, next the officinal names used in Pharmacopeias, and last the vulgar or common names of the country, which are variable in al-

most every section or state. When a plant had received several botanical names, the obsolete are given as synonyms.

67. After the names follow the botanical and medical authorities connected, the generic and specific characters, the complete botanical descriptions, the locality or native places of growth, with the general history of the genus and species, forming the botanical sections of each article.

68. The medical division contains the sensible and chemical qualities of the plant, with the medical properties, including uses, doses and preparations.

69. Equivalent substitutes, and various remarks conclude the article. The plan of adding medical substitutes is borrowed from the excellent French work of Peyrilhe on Medical Natural History.

70. The knowledge of those medical Equivalents will be found very useful, when the required plants are not obtainable, while some substitute may perhaps be procured. It follows of course that each Equivalent is vice-versa a mutual substitute in most cases: although the plants are seldom identical in power and activity.

71. Botanical accuracy has been strictly attended to throughout, and all the descriptions are original. To avoid other novelties, but few improvements have been attempted or suggested in nomenclature or criticism. The localities are however greatly extended.

72. In the medical part, brevity has been adopted, without impairing accuracy. All the

matter of Schoepf and subsequent writers has been incorporated. Nothing essential has been omitted, but discussions are avoided, and experiments merely stated in result.

73. This order and plan has enabled to give a complete knowledge of the objects in all their botanical, medical, chemical and historical points of view: while the general principles of the science are prefixed as preliminary guides.

74. If this labour may suit all the classes of readers and all those who employ medical plants, the wishes and object of the author will be fulfilled.

GENERAL PRINCIPLES

OF

MEDICAL BOTANY.

FIRST SECTION—BOTANICAL PRINCIPLES.

1. BOTANY is the science and knowledge of vegetable bodies or plants.

2. A botanical species is formed by the collective association of all the individual bodies, which have a similar form.

3. VARIETIES are mere occasional deviations from this specific typical form.

4. All the individuals of the same species, have the same forms, qualities and properties, but modified in some varieties.

5. The principal branches of Botany, are, GLOSSOLOGY, NOMENCLATURE, CLASSIFICATION, DESCRIPTIVE BOTANY, BOTANICAL HISTORY and PHILOSOPHY.

6. GLOSSOLOGY gives names or Botanical terms to every Organ of plants, and to all their modifications of form or structure.

7. These names must be sought for in special botanical works; it is beyond this scope to notice them here, except in general.

8. NOMENCLATURE applies names to every species, and successive groups of species, referring their Synonyms to each.

9. These names derived chiefly from the Latin and Greek languages, become universal, and common to all languages and nations.

10. SYNONYMS are of wo kinds, 1. Erroneous or obsolete botanical names, 2. Local or variable Vulgar names employed by each nation.

11. CLASSIFICATION teaches how to co-ordinate the species in Genera, orders and classes by methodical or systematical arrangements.

12. Genera are groups of species having the same essential Organs of fructification or reproduction, and affording the same collective characters in their structure and form.

13. Orders and Classes are successive groups of Genera affording some similar general characters. Families, Sections, Subclasses are Divisions of these groups based upon some peculiar considerations.

14. A Method studies, seeks and preserves all the natural affinities of plants, grouping together, those which have the greatest resemblance.

15. Systems follow a peculiar theory, or are based upon a single consideration, without attending to natural affinities.

16. Descriptive Botany gives accurate descriptions of all the species and their varieties, Genera and Groups of Genera.

17. These Descriptions consist of two modes or parts 1. Complete Descriptions, 2. Definitions or abridged Descriptions, being the analytical epitome of the principal descriptive characters.

18. Botanical history includes many details and considerations comprising the Etymology of names, mode of growth, time of flowering and seeding, cultivation, collection, discovering, introducing, authors who have described plants, their biography, bibliography or knowledge of Botanical Books, criticism, &c.

19. The Locality of plants is a branch of Botanical history, which has lately been separated and called Botanical Geography; it teaches the soils, climates and places where plants grow spontaneously, and also their migrations, naturalization, &c.

20. Botanical Philosophy considers plants under all their points of view, which are many; forming the following branches:

1. Organology, studying their organization.
2. Physiology—their vital functions.
3. Anatomy—their internal structure.
4. Chemistry—their component elements.
5. Pathology—their diseases.
6. Cultivation—their culture.
7. Utility—their useful or noxious properties.

21. The ORGANS are external or internal; the internal belong to botanical anatomy: the external or the most conspicuous

afford the obvious descriptive characters, and form several series according to their vital use, as follows:

22. NUTRITIVE ORGANS are the Cotyledons, Roots, Leaves, &c. The ROOTS are commonly under ground, and the LEAVES above: while the COTYLEDONS are within the seed.

23. REPRODUCTIVE ORGANS which are the Flowers, Fruits and Seeds, with the Buds, Bulbs, and Gems.

24. Upon the flowers, fruit and seeds are chiefly based the generic and other general characters; being present and conspicuous in every plant except those of the lowest orders.

25. The Roots, Leaves, Flowers, and Fruits assume a great variety of shapes, which have all peculiar names, and offer the specific characters and distinctions usually resorted to.

26. UPHOLDING ORGANS such as the stem and branches, the Scapes or leafless radical stems, Petioles, Pedicles, Nerves, &c.

27. PRESERVING ORGANS as the Barks, Cuticles, &c.

28. CIRCULATIVE ORGANS which are the Wood, Liber, Pith, Fibres, Vessels, &c. The woody plants are called Trees or Shrubs.

29. SECRETORY ORGANS, such as Glands, Pores, Hairs, &c.

30. ACCESSORY ORGANS are the thorns, bracteolcs, stipules, tendrils, tubercles, down, wool, &c.

31. INFLORESCENCE is the mode in which the flowers are disposed and unfolded.

32. The essential parts of the flowers are the STAMINA or STAMENS and PISTILS: a complete flower has both; when they are separate, the flowers are called Staminate or Pistilate.

33. The essential part of the STAMEN is the ANTHER; when the filament or support is missing, the anther is called sessile.

34. The essential parts of the PISTIL are the GERM or GERMEN, and the STIGMA. The germ is the bud of the fruit; it is usually sessile; when it has a support or PODOGYNE, it is called stipitated.

35. The Germ is usually free and central; but when it is connected or coherent with the perigone, it is called adherent or inferior, and the perigone becomes symphogyne or superior.

36. The STIGMA is a pore, gland or appendage upon the Germ, single or multiple, sessile or supported by a base called STYLE.

37. The accessory parts of the flowers are the PERIGONE, NECTARIES and BRACTEOLES.

38. The PERIGONE around the Stamina and Pistils is either single, double or multiple. When single it retains that name; but when double the exterior is called CALIX, and the interior COROL or COROLLA. In the multiple perigone, the inner range is the true COROL.

39. The segments of the perigone and calix are called SEPALS, or folioles, and those of the Corol PETALS.

40. The NECTARIES are Glands, scales, crowns, disks and other appendages within the flower.

41. The BRACTEOLES are small leaves, scales, involucres, &c. around the flowers, when they resemble a perigone and surround many flowers, they are called PERIANTHE or common calix.

42. Plants being organized bodies like Animals, perform the same vital functions, three of which are essential to life, and common to all plants, 1. NUTRITION, 2. GROWTH, 3. REPRODUCTION.

43. The others are less essential, or less evident; they are 1. Circulation, 2. Respiration, 3. Secretion, 4. Irritability, 5. Calorification, 6. Solidification, &c.

44. Plants are also like Animals subject to Sleep, hyemal Torpor, Diseases, Necropsy and Death.

45. The ANATOMICAL structure of plants offers a multitude of internal apparatus (about thirty kinds) formed by the aggregation of vessels, fibres and tissues.

46. The principal are the Cellular, fibrose, glandular, absorbing, moving, vital, nutritive, reproductive, &c.

47. CHEMICAL BOTANY detects almost all the simple elements in the vegetable substances: the most abundant and prevailing are however, Carbon, Oxigen, Hydrogen, Azote, Potasum, Sodium, Calcium, Sulphur, &c.

48. The compound chemical bodies absorbed or formed by vegetable Life are very numerous, the principal are Water, Air, Oils, Acids, Aromes, Tannin, Extractive, Alkalis, Resins, Mucilage, Sugar, Fecula, &c.

49. Diseases in plants are as numerous as among Animals, if not Men; they have only been attended to as yet with fruit trees, and useful cultivated plants; many are easily curable.

50. Agriculture and Horticulture are two arts, having for special object the cultivation of useful or ornamental plants.

51. These arts are closely connected with Botany, from which they borrow their materials. The general cultivation of medical plants in medical gardens is highly desirable.

52. Useful plants have three kinds of properties, 1. Alimentary, 2. Economical, 3. Medical. The noxious and poisonous properties are included with the medical.

53. We are dependent upon vegetables for our food and drink, our solid and liquid aliments; they furnish us materials for our dress, dyes, fuel, buildings, arts and manufactures.

54. Every plant has two names and two characters, both Generic and Specific.

55. The Generic name is the first and is a substantive, the Specific follows and is an adjective appellation.

56. The Generic character is the collective definition of the principal organic indications of each Genus, which constitute the TYPE of the Genus.

57. The Specific character is an abridged description of all the individuals forming a species, and it constitutes the TYPE of the species.

58. Orders and Families, Classes and Sections have also substantive names, and peculiar characters assigned to each.

59. Three great natural classes constitute the vegetable Kingdon, 1. DICOTYLES, 2. MONOCOTYLES, 3. ACOTYLES.

60. The DICOTYLES are VASCULAR plants, with concentric fibres and vessels, and a bilobe or multilobe germination. They comprise two thirds of all the plants, shrubs and trees.

61. The MONOCOTYLES are VASCULAR plants with fascicular fibres and vessels, and a lateral unilobe germination. Such are the Palms, Lilies, Grasses, Ferns, and Mosses.

62. The ACOTYLES are CELLULAR plants without vessels nor fibres, and destitute of lobes in the germination. Such are the Lichens, Algae and Fungi.

63. These natural classes may be divided in other less natural classes, and these into natural orders and families, by the botanical process of analysis.

64. The natural orders of Linnæus were fifty-eight, Jussien has

enumerated one hundred, now upwards of one hundred and fifty are known or designated.

65. Many of these being rather natural families may be reduced to about sixty-four great natural orders, including upwards of two hundred natural families.

66. Each natural family and order has some qualities and properties, common to all their genera, and may therefore serve of Medical Indication.

SECOND SECTION—CHEMICAL PRINCIPLES OR PRINCIPLES OF BOTANICAL CHEMISTRY.

1. The knowledge of the substances which enter into the bodily composition of Plants, form a branch of Chemical Sciences called Vegetable Chemistry.

2. This branch of Chemistry is intimately connected with Medical Botany, and becomes an essential part of it.

3. By it, the three Sciences of Botany, Chemistry, and Pathology are rendered subservient to each other.

4. Chemistry borrows from Botany the true knowledge of the Plants, while Chemistry teaches Botany the nature of the Substances in these plants.

5. The Medical Sciences receive from Vegetable Chemistry the more intimate knowledge of the greatest proportion of Substances employed in practice.

6. Chemistry acquires this knowledge by tests, analytical decompositions, and reaching the first Elements or elementary bodies evolved in the plants.

7. Vegetable life assimilates or produces nearly all the Natural Bodies and creates many Substances peculiar to itself.

8. This is the foundation of three great Divisions or Classes in Vegetable Substances or their proximate Elements.

1. Class. MINERAL, common to plants, animals and Minerals.
2. Class. ANIMAL, foreign to Minerals, but common to Plants and Animals.
3. PECULIAR. Not found either in Animals nor Minerals.

9. These Classes may be divided into Orders, Genera and Species of Chemical Bodies, each possessing peculiar properties and actions.

10. Vegetable Chemistry has not yet obtained the same certainty and attention as Mineral Chemistry. It is now emerging from the Clouds of ancient errors, and becoming a Science of decided importance.

11. A small portion as yet of the endless chemical Constituents of all the plants, has become known.

12. A long time will be required before the 60,000 known plants be analyzed, or even the 5000 Species of North America.

13. But some Substances are common to many different plants, and each active Genus has generally the same active principles.

14. The special knowledge of this branch of Medical Botany must be sought for in the Chemical Works. We shall merely give here a small Table of the principal Orders and Genera, lately detected and well ascertained.

15. It must be remembered that every plant contains many Elementary bodies, and that these Bodies are all reducible to their pristine Simple Elements.

16. It is not our purpose to designate the properties of these Vegetable Substances. This knowledge constitutes Medical Chemistry, a new Science, or branch of Pharmacy.

CHEMICAL TABLE.

I. Class—MINERAL ELEMENTS.—5 Orders.

1. Order. SIMPLE ETHERIAL. G. Caloric. Light. Oxigene. Hydrogene. Azote.

2. Order. SIMPLE and COMBUSTIBLE. G. Sulphur. Carbone. Phosphore.

3. Order. SIMPLE and OXIDABLE. G. The Metals.

4. Order. OXIDES. G. Airs. Waters. Limes. Potashes. Alumines. Chalybates. Silicates, &c.

5. Order. SALTS. G. Carbonates. Citrates. Fungates. Muriates. Malates. Gallates. Nitrates. Oxalates. Phosphates. Sulfates. Tartrates, &c.

II. Class—ANIMAL ELEMENTS—1 Order.

1. O. COMPOUNDS of Carbone, Hydrogene, Oxigene and Azote. G. Glutten. Albumine. Gelatine. Adipocire. Fungin, &c.

III. Class.—PECULIAR ELEMENTS.—4. Orders.

1. Order. AZOTES or Vegetable Alkalies, containing Azote. 3 Families. Carbonits. Oxigenits. Ammonits or true Alkalis. G. Ferment. Narcotine. Asparagine. Morphium. Quinine. Eupatorine. Cornine. Daturine, &c.

2. Order. ACIDS, formed by Carbone, Hydrogene, with Oxigene in excess. G. Acetic. Malic. Oxalic. Benzoic. Citric. Tartaric. Gallic. Moric. Fungic, &c.

3. Order. WATERS, formed by Carbone with Hydrogene and Oxigene in the proportion of Water. G. Lignites. Fecules. Saccharines. Gums. Amarines. Polychromites. Tannines. Extractives. Mucilages. &c.

4. Order. OILS, formed by Carbone, Oxigene, with Hydrogene in excess. G. Gluines. Wax. Fixed Oils. Aromes. Resins. Picrines. Acrines. Camphors, &c.

THIRD SECTION—MEDICAL PRINCIPLES.

1. Every vegetable substance produces effects on the human frame; but these effects can only take place by actual contact of the parts, or their effluvia.

2. These effects are either grateful, or unpleasant, or noxious, and either nutritive, or medical, or poisonous.

3. Nutritive substances sustain life, the noxious impair it; while the medical preserve or restore health.

4. Plants may be noxious to man, while they are innocent or nutritious for animals or cattle, and the everse may as ofte n occur.

5. The popular belief that every country produces simples suitable to cure all their prevailing local diseases, is not devoid of truth.

6. There are many modes of effecting cures by equivalent re-

medies; but vegetable substances afford the mildest, most efficient, and most congenial to the human frame.

7. A vegetable substance is called active when producing strong or quick effects, and inactive or inert, when producing weaker or slower effects.

8. But there is hardly a plant totally inert, and not producing in large doses some sensation or effect.

9. Active plants and substances are commonly known by the senses of smell or taste: while inert plants are scentless and tasteless.

10. The most active plants are not always the best for use, being less grateful than others, and more liable to impair the functions of life.

11. Poisonous plants are all available as medicinal, and often the most active; but they are liable to the same objection, in a greater degree.

12. Active and poisonous plants, must be used with care and judgment, sparingly and in small doses only.

13. Similar or consimilar tastes or smells, indicate similar or consimilar Qualities and Properties.

14. The sensible Qualities of plants are the results of their organization, and chemical composition; their medical Properties arise from these Qualities.

15. Plants of the same Genus have commonly the same qualities and properties, more or less unfolded.

16. Genera of the same Natural Family or Order, have often consimilar qualities and properties.

17. Modifications or Deviations from these two last rules occur when the organization and locality are very different.

18. Artificial Systems, like the sexual system of Linnæus separating the most related Genera, and uniting the most remote, cannot indicate medical affinities.

19. Where the artificial systems coincide with the natural method; they may both answer the purpose of medical indications.

20. Few plants possess a single property; many are commonly blended in the same plant.

21. Different parts of a plant have often separate qualities and properties.

22. Incompatible Substances are seldom or never found in the same plant.

23. Every plant has a peculiar and specific mode of action on the human body, in health or disease.

24. Even congeneric and consimilar species have their modified effects at equal doses, which a difference in the dose may equalize.

25. The medical effects of the same plant are also modified by the soil, climate, season, and age ; also by exhibition and dose.

26. Botanical affinities indicate medical equivalents, which may be substituted to each other.

27. But Experience alone can decide if the substitution will be available and efficacious, and teach when and how it ought to be made.

28. Vegetable Equivalents are either botanical or medical, and each of three degrees.

29. In Botanical Equivalents these three degrees are: 1st Congeneric, belonging to the same genus: 2d Affiliated belonging to different genera of the same family. 3d Remote, belonging to remote genera.

30. Medical Equivalents have the degrees of 1. Specific or having exactly the same value, 2. Similar or producing the same effects, 3. Consimilar or producing effects somewhat different.

31. Every medical plant is a compound medicine prepared by the hands of nature, in the most suitable form for exhibition and efficacy in suitable cases.

32. Medical substances becoming more powerful by admixture, those which enter by vital action into the organs of plants, are rendered more powerful by intimate combination.

33. By combining several medical plants in prescriptions their effect is increased.

34. Nauseous or noxious plants may be rendered grateful and available by combination with others of a different character.

35. But all combinations must either coincide or correct each other, else they are superfluous and useless.

36. When too many substances are mingled, or several that do not well coincide, they often impair each other.

37. The combination of substances which exert a chemical ac-

tion on each other, must be avoided, unless a peculiar medical result is required.

38. When an unexpected result happens by a combination of substances, it must be corrected by suitable changes.

39. The active principles of medical plants may be obtained in a concentrated form by chemical operations.

40. When these active principles are obtained, their effects are stronger and quicker; but less congenial to the human frame, than in their natural pristine combination.

FOURTH SECTION—MEDICAL PROPERTIES.

1. The medical properties were detected by chance, or ascertained by indication, and confirmed by experience.

2. There are four kinds of indications, 1. Botanical, 2. Chemical, 3. Medical, 4. Evident.

3. Botanical indications have already been alluded to, they are proximate or remote, and teach us Botanical Equivalents.

4. Chemical indications result from analysis and decomposition: when the same elements and substances are found in equal proportions; the presumption must be that chemical equivalents have been detected.

5. Medical indications are the result of medical inference; when substances act alike or produce similar effects in some cases, they may do the same in other cases.

6. The most obvious indications are however, those which arise from the EVIDENCE of the sensible qualities of plants.

7. These qualities are constituted by chemical elements, and evinced to our senses by contact or effluvia.

8. Each plant, and sometimes each part of a plant, has a peculiar smell and taste, hardly alike in any two of them.

9. No plant is absolutely scentless or tasteless, even the most insipid evince themselves to our nose and palate.

10. The vegetable Orders and Sapors may be classed under two great divisions, GRATEFUL or UNPLEASANT.

11. Orders may be further divided into six series, and one hun-

dred and fifty Genera: Sapors into ten series and as many genera at least.

12. The GRATEFUL Odors or Smells indicate wholesome properties, the three Series are

1. Fragrant, indication of stimulants and sudorifics, &c.
2. Aromatic—of stomachics, warm stimulants, &c.
3. Sweet—of Pectorals, Demulcents, &c.

13. The UNPLEASANT Odors indicate active properties, their three Series are

1. Fetid, indication of noxious plants, emetics, &c.
2. Graveolent—of powerful medical plants.
3. Insipid—of Emollients, inert plants, &c.

14. GRATEFUL SAPORS or Tastes, belong to plants of mild properties. Their five Series are

1. Flavored, belonging to palatable substances.
2. Spicy—to stimulants, sudorifics, stomachics; &c,
3. Acid—to Refrigerants, Diluents, &c.
4. Sweet—to Nutrients, Demulcents, &c.
5. Sapid or Saltish—to Antiscorbutics, &c.

15. UNPLEASANT SAPORS belong to plants of active properties. Their five Series are

1. Nauseous, belonging to Narcotics, Emetics, Cathartics, Antispasmodics, &c.
2. Acrid—to Salivatories, Stimulants, Epispastics, Anthelminthics, Emenagogues, &c.
3. Bitter—to Tonics, Corroborants, &c.
4. Acerb—to Astringents, Diuretics, &c.
5. Insipid—to Emollients, Demulcents, Diluents, &c.

16. The sense of feeling is susceptible of ascertaining at least five qualities in substances.

1. Coolness, belonging to Refrigerants.
2. Heat—to Stimulants and Rubefacients.
3. Stinging—to external stimulants.
4. Vesication—to Epispatics, &c.
5. Corrosion—to Escharotics, and Caustics.

17. These different qualities variously combined and modified by each other, form all the immense variety perceptible in plants.

18. Medical Properties of a corresponding nature being co-

existent with these sensible qualities, are obviously indicated by them.

19. Yet some plants of weak qualities and seemingly inert, are often possessed of unindicated active properties, resulting from chemical combinations or gazeous emanations.

20. Classifications of medical properties and remedies are endless, and of little use. Every writer on Materia Medica commonly contrives a new one.

21. As much could be done here, or some one adopted; but it will be sufficient to mention that the most general Distribution is at present in three Classes, 1 STIMULANT, 2 CHEMICAL, and 3 MECHANICAL Properties or Remedies.

22. The following alphabetical Glossary of the principal medical properties, will probably be more useful for reference.

TABLE OF PROPERTIES.

ABSORBENT, absorbing or involving noxious matter.

ABSTERGENT or DETERGENT, cleaning foul ulcers and sores.

ANODYNE, soothing the nerves, allaying pain, very similar to Sedative and Nervine.

ANTACID, chemical remedies, neutralizing Acids.

AGGLUTINANT, uniting divided solids.

ALTERATIVE, producing a change in the whole system, or altering the appearance of local diseases.

AMBROSIAL, of exquisite smell or taste, very palatable and restorative.

ANALEPTIC, gentle stimulant of the nerves.

ANTIBILIOUS, correcting the Bile.

ANTIDOTE or ALEXITERIAL, commonly counter poisons, chemical remedies correcting the effects of poisons.

ANTI-DYSENTERIC, against dysentery and bowel complaints, local and mechanical, unless astringent.

ANTILITHIC, curing the gravel and stone.

ANTISPASMODIC, diffusible stimulant, acting on the muscles, curing spasms, pains, &c.

ANTHELMINTIC, expelling worms.

ANTISCORBUTIC, useful in scurvy.

ANTISCROFULOUS, useful in scrofula.

ANTEROTIC, sedatives of venery.

ANTISEPTIC or ANTIPUTRID, Tonic useful to prevent external or internal mortification.

ANTALKALINE, neutralizing alkalies.

APERIENT, promoting excretions.

APHRODISIAC, stimulating Venery.

AROMATIC, diffusible stimulant, heating the stomach and body.

ASTRINGENT, permanent stimulant, corrugating the fibres.

ATTENUANT, or DEOBSTRUENT, local stimulant, removing obstructions of the glands, liver, &c.

BALSAMIC, mild healing stimulant.

CALEFACIENT, local stimulant, heating the parts.

CARMINATIVE, or RUCTANT, local stimulant, expelling winds.

CARDIAC or CORDIAL, acting on the heart, and increasing its muscular action.

CATHARTIC or PURGATIVE, local stimulants cleaning the bowels.

CAUSTIC, local stimulants, burning the parts,

CEPHALIC, curing the head ache.

CHOLOGOGUE, purging the bile.

CONSOLIDANT, a kind of tonic, repairing defects in solids.

CORROBORANT, a kind of stomachic, giving strength.

COSMETIC, smoothing or lubricating the skin.

DEMULCENT, mechanical remedy, shielding the surfaces from acrid matter, and lubricating the organs.

DEPILATORY, removing the hair.

DIAPHORETIC, increasing the insensible exhalation of the skin and lungs.

DIFFUSIBLE, spreading through the whole frame.

DILUENTS, diluting and expelling morbific matter, increasing the fluidity of the blood, &c.

DISCUTIENT, healing sores of the skin.

DIURETIC, stimulant, increasing the discharge from the bladder and kidneys, expelling accumulated fluids, and promoting dropsical discharges.

DRASTIC, cathartics purging with violence and pain.

EFFLUVIAL, producing gazeous emanations which affect the skin.

EMENAGOGUE, increasing the menstrual discharge.

EMETIC or VOMITIVE, local stimulant producing a discharge from the stomach.

EMOLLIENT, the opposite of tonic, relaxing the fibres.

EPISPASTIC or BLISTER, local stimulant, acting on the skin and membranes, blistering them, &c.

ERODENT, removing spots and warts of the skin.

ERRHINE, promoting sneezing and a discharge from the nose.

ESCHAROTIC, corroding and decomposing the skin and other solids.

EXHANTHEMATIC, useful for Exhanthems.

EXHAURIENT, exhausting vital powers.

EXCITANT, stimulant exciting the vital functions.

EXPECTORANT, promoting expectoration.

FEBRIFUGE, curing fevers, one of the effects of tonics.

HEPATIC, useful in diseases of the Liver.

HUMECTANT, a kind of Diluent moistening the solids.

HYDRAGOGUE, a kind of Diuretic, discharging waters.

INCITANT or INCISIVE, stimulant, acting on the glandular system.

INEBRIATING or EXHILARATING, producing intoxication in different degrees.

INVISCANT or COAGULANT, mucilaginous remedies, thickening the fluids.

LAXATIVE, useful against constipation and mild purgatives.

LITHONTHRIPTIC, chemical remedy, dissolving the gravel or stone in the bladder, or bezoars of the liver.

LOCHIAL, a mild Menagogue.

NARCOTIC or STUPEFIANT, diffusible stimulant, acting on the nervous and vascular system, producing sleep, stupor and death in large doses.

NAUSEANTS, producing Nausea without Emesis.

NEPHRITIC, local stimulant of the kidneys.

NERVINE, acting particularly on the nerves, and soothing pain, promoting sleep, useful in hysterics, epilepsy, &c.

NOXIOUS or DELETERIOUS, or PERNICIOUS, or BANEFUL, or VENOMOUS, all Synonymous of POISONS, producing pain, disease or Death.

NUTRIENT, furnishing nourishment to the body.

ODONTALGIC, allaying or curing the tooth-ache.

OPHTHALMIC, useful in diseases of the Eyes.

PECTORAL, useful in diseases of the breast and lungs.

PELLENT or REPELLENT, charging the course of discharges, or repelling the morbid fluids.

PHTHIRIAC or PSORIC, destroying Lice and Itch.

PHRENETIC or PHANTASTIC, acting on the brain, producing delirium and dreams.

PROPELLENT, moving the fluids.

PROPHYLACTIC, preserving health, or preventic, a peculiar disease.

REFRIGERANT, cooling, lessening the heat of the body, allaying local or general inflammations.

RESTORATIVE, restoring strength.

REVIVING, diffusible stimulant, relieving from faintness, torpors, and necropsy.

REPERCUSIVE, throwing back an eruption, a kind of repellent.

REVULSIVE, a local stimulant, promoting a change or revulsion in a disease.

RUBEFASCIENT, topical remedy, exciting redness and heat.

SEDATIVE, allaying inordinate motions and pains, by lessening the action of the heart and circulation of the blood.

SIALOGOGUE or SALIVATORY, exciting salivation.

SOLVENT or RESOLVENT, a kind of Diluent, promoting solution of the solids, acting on the lymphatic system, useful in scrofula, &c.

SOPORIFIC or HYPNOTIC, promoting sleep.

SORBEFACIENT, raising pimples, &c.

SPECIFIC, a remedy supposed to act especially on a disease.

STIMULANT, acting by stimulating the body or some parts of it.

STINGING, acting like nettles by producing a burning pain.

STOMACHIC, promoting appetite, useful in diseases of the stomach, and cholics.

STYPTIC, stoping bloody discharges.

SUDORIFIC, promoting a copious perspiration.

SUPPURATIVE or RESOLUTIVE, promoting suppuration of ulcers, tumors, &c.

SYPHILITIC, useful in syphilis and venereal diseases.

TONIC, permanent stimulant, acting on the whole body, increasing the tone of the fibres, &c.

TOPICAL, a remedy acting by external application.

UTERINE, acting on the uterus.

URETHRAL or STRANGURIAL, a local stimulant, acting on the Urethra, producing Strangury, &c.

VIRULENT, of strong active properties, producing powerful and somewhat noxious effects.

VULNERARY, healing wounds and sores.

CONCLUDING REMARKS.

1. Physicians do not agree on the mode of action of the properties, nor the proximate and intricate operation of remedies; but the ultimate effects and results being ascertained, they are sufficient for practical use.

2. Drugs are Vegetable substances prepared for use, and kept for sale by Druggists or Pharmacians.

3. Those which are imported, are often adulterated, or inferior kinds are substituted; for instance Peruvian Bark or CINCHONA, and Saffron or CROCUS, are hardly to be met with in the U. S.—Caribean bark or PORTLANDIA, and Bastard Saffron or CARTHAMUS, are usually sold instead, which are very weak substitutes.

4. This arises from a want of medical inspections and officinal knowledge: the results are, that prescriptions fail, physicians are disappointed, and patients suffer.

5. To avoid in part these evils, it is desirable to employ our own genuine medical substances, whenever they afford sufficient remedies and suitable equivalents.

6. Medical substances being often impaired by age, it is desirable to obtain them fresh, or in yearly rotation.

7. Fresh and genuine substances can only be obtained at all times from medical gardens, or honest dealers.

8. The best medical gardens in the United States are those established by the Communities of SHAKERS, or modern Essenians, who cultivate or collect about one hundred and fifty kinds of medical plants.

9. They sell them cheap, fresh and genuine, in a compact and

portable form. Pharmacians would do well to supply themselves with them, or to imitate their useful industry.

10. Several of our medical plants and drugs are already an object of trade to Europe and elsewhere. Many more may become in demand, when their valuable properties will be better known.

11. A new branch of trade may thus be opened, which it is our duty to encourage, by collecting and cultivating our medical plants.

12. Herbalists and Collectors are often ignorant and deceitful. The best way to prevent their frauds and correct their blunders is, by enlightening them, adopting botanical names, and refusing spurious drugs.

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EXPLANATION OF SOME BOTANICAL TERMS.

Achene, a single seed like wheat.
Acuminate, abruptly sharp.—*Acute*, same as sharp.
Adnate, connivent or growing together.
Alternate, situated on two sides, but not opposite.
Ament, catkin or spike of the oak, willow, &c.
Ancipital, having two sharp sides like a sword.
Angular, forming angles.
Annual, lasting only one year.
Anomalous, out of order or irregular.
Axillary, situated at the corner between the stem and leaves.
Biennial, lasting two years.
Bifid, divided in two, *trifid* when in three, &c.
Binate, twin leaves or flowers.
Bract, a floral leaf, *bracteole* a small one.
Bulb, scaly thick root like Onions, Tulips, &c.
Campanulate, shaped like a bell.
Capsul, a dry fruit opening by valves or holes.
Cells, the internal divisions of the fruit, one celled or unilocular, two celled or bilocular, three celled or trilocular, &c.
Ciliate, having hairs on the edges.
Cluster, or *thyrsus*, a bunch of flowers or fruit, like Lilac.
Cordate, shaped like a heart.
Corymb, umbel with scattered shafts.
Cuspidate or *mucronate* having a bristle at the end.
Cylindric, long and round like a cylinder.
Deciduous, falling off.
Decomposed, cut up in many successive segments.
Deltoid, triangular like a Delta.
Dichotome, forked several times.
Diclinous, with staminate and pistillate flowers.

Dioical, having staminate and pistilate flowers on different individuals.

Disk, the flat part of a leaf or petal, &c.

Discolor, leaves having two colors.

Distichal, in two flat rows.

Drupe, a stone fruit like Peach or Plumb.

Elliptic, oblong with rounded ends as an ellipsis.

Exsert, protruding out of the flowers, &c.

Fascicle, a small bundle of leaves or flowers, called then fasciculate.

Filiform, shaped like a thread.

Fistulose, a hollow stem, &c.

Flexuose, bent in many ways, or crooked.

Floret ar *Floscule*, a small flower in compound flowers.

Foliole or *leaflet*, a small leaf of compound leaves.

Fronde, leaves bearing the fructification, or stems shaped like leaves.

Fusiform, shaped like a spindle.

Glabrous, same as smooth.

Gladiate, sword shaped.

Glandular, having glands.

Glume, the perigone of grasses.

Hastate, halbert shaped.

Imbricate, slanting over each other, like tiles or shingles.

Inferior, below something.

Inflorescence, mode in which the flowers grow.

Involucre, bracteoles surrounding or annexed to several flowers

Labiate, flowers with one or two lips *uni* or *bilabiate*.

Lanceolate, shaped like a lance.

Legume, the pods of Peas, Beans, &c.

Ligulate, like a small tongue.

Lobe, a rounded segment, *lobed* with lobes.

Lyrate, shaped like a lyre.

Monoical, having staminate and pistilate flowers on the same plant.

Muricate, covered with short prickles.

Nerves, prominent fibres in the leaves, &c.

Neutral, flowers without Stamina nor pistils and sterile.

Oblique or *Obliqual*, having a slanting position, oblique leaves like those of the Elm, have two unequal sides.

Obtuse, not sharp, blunted or rounded.

Opposite, situated one over the other.

Orbicular, perfectly round.

Oval, shaped like an egg.

Panicle, a loose bunch of flowers, much divided.

Pappus, the downy or bristly calix of florets.

Parted, cut into segments, 2—3—4—5 parted, &c.

Pedicel, a small peduncle, or a branch of it.

Peduncle, the foot stalk of flowers and fruits.

Perianthe, the involucre or calix of compound flowers.

Petal, parts or leaves of the Corolla, *monopetal* or *peripetal* having only segments; 2—3—4—5 *petal*, having as many leaves or petals; *polypetal* having many petals.

Perennial, lasting several years.

Persistent, not falling off.

Petiole, support of the leaf: *petiolate* having a petiole.

Phoranthe, the central part of compound flowers bearing the florets.

Pinnate, leaves having many folioles.

Pinnatifid, having many deep lateral segments.

Pinnule, the segments of pinnatifid parts.

Polygamous, having complete flowers, as well as some either Staminate or pistillate.

Pome, fruit similar to an apple.

Raceme, a spike with pedicels to the flowers.

Radiate, having rays or ligulate flowers around the florets.

Radical, growing from the root.

Ramose, branching, divided into branches.

Receptacle, the place where the seeds are attached.

Reniform, shaped like a kidney.

Retuse, blunt and notched.

Rugose, wrinkled or roughened by nerves, &c.

Runcinate, cut up into sharp segments like a barbed arrow.

Sagittate, shaped like a forked arrow.

Scape, stem, surrounded by radical leaves.

Segment, a part not quite divided.

Sepals, the folioles of the Calix or Perigone.

Sessile, having no support.

Serrate, toothed like a saw.

Siliqne, the pods of Turnip, Cabbage, &c.

Sinuate, having sinuses.

Solitary, standing by itself.

Spadix, a thick support of many crowded flowers.

Spatha, Involucre surrounding a Spadix, or involving flowers.

Spur, a hollow appendage to some flowers.

Stipule, appendage to some leaves.

Subulate, shaped like an awl.

Superior, standing above something.

Terminal, standing at the end.

Ternate, three by three.

Tomentose, covered with woolly hairs like cloth.

Trioical, bearing complete, staminate and pistilate flowers in three different individuals.

Tuberous, thick roots like Potatoes and Turnips.

Tubular, forming a tube.

Umbel, cluster of flowers forming a kind of umbrella, as in Carrot and Fennel.

Undulate, having waved margins.

Veins, fibres of leaves not prominent like nerves.

Verticillate, forming whorls.

No. 1.

ACORUS CALAMUS.

SWEET FLAG.

No. 1.

ACORUS CALAMUS.

English Name—SWEET FLAG.

French Name—Acore Odorant.

German Name—Kalmus.

Officinal Names—Calamus Aromaticus, Calami Radix.

Vulgar Names—Flag-root, Sweet Cane, Myrtle Flag, Sweet Grass, Sweet Root, Sweet Rush.

Authorities—Linnæus, Michaux, Pursh, Dispensaries, Schoepf, Woodville, Thacher, Coxe, Swediaur, Bigelow's Sequel, W. Barton fig. 30 bad, &c. &c.

Genus Acorus—Spadix cylindrical with crowded flowers. Perigone simple, six-parted persistent. Stamina six pericentric. Germen one, no style, stigma punctiform. Capsuls three celled, many seeded.

Species A. Calamus Var. Americanus—Leaves and stems sword shaped, ancipital, stems longer. Spadix cylindrical, obtuse, solitary, oblique, submedial lateral. Capsuls oblong acute.

DESCRIPTION—Root perennial, horizontal, jointed, rugose, nearly cylindrical, from six to twenty-four inches long, joints from half an inch to an inch long, white, with triangular shades, or rings of brown and rose; the inside is spongy, and loses much by dessication; bunches of coarse fibres hang downwards, and hairy brown fibres spread upwards.

The leaves are all radical sheathing at the base, and variegated of white, rose and green; they become flat above, green and smooth, with a ridge on each side in the middle, the end is very sharp, length from one to three feet. The stems are similar to the leaves; but commonly longer and bearing near the middle on one edge, the spadix or thick spike of flowers.

Spadix solitary, oblique, cylindrical from one to three inches long, both ends tapering but obtuse.—Flowers small, crowded spirally on it, and yellow. Perigone with six equal and truncate segments—Stamina six, filaments thick, anthers bilobe—Germen one gibbose, oblong, stigma sessile, pointed—Capsul oblong with many minute, slender seeds.

HISTORY—The Genus Acorus is so perfectly natural that the few species belonging to it, are hardly distinguished from each other. The Chinese Acorus (*A. gramineus*) has narrow leaves and the spadix nearly terminal. The Asiatic and Malabar species (*A verus,*) has a slender root and thin leaves. The European Acorus is deemed by all Botanists similar to the North American, and yet differs as much from it as the Chinese. The above specific character applies to our American variety or species: while the European plant may be distinguished by the following definition.

A. Calamus Var. *Europeus*—Leaves and stems sword-shaped, nearly equal, hardly ancipital. Spadix cylindrical, obtuse, oblique, lateral, often double. Capsuls trigone obtuse.

These distinctions hardly amount to specific difference, and therefore the genus might properly be considered as having a single type, which being widely spread has undergone some variations in China, India, Europe and North America. This surmise will be confirmed by the habit of these plants being perfectly identical, and all possessing the same aromatic smell and medical properties.

Acorus is a name derived from the Greek and alluding to a former belief that it was beneficial for disorders of the eyes. Calamus meant a Reed or Rush in Greek and Latin.

This genus belongs to Hexandria *Monogynia* of Linnæus; but in the natural arrangement to the tribe of Orontides, a branch of Typhides, next to the genus *Orontium*. It is like them an aquatic plant, growing on the borders of streams and ponds or meadows, ditches, &c. throughout North America, from Canada to Louisiana, east and west of the mountains, in company with the *Iris* or Flags, *Typha*, *Sparganium*, *Orontium*, *Juncus*, and other Rushes. The fine smell of the leaves and roots, enables to distinguish it from all other Flags and Rushes at any time.

The roots are the most essential part. They form an article of trade in China, Malabar, Turkey, &c.—In the early stage of the North American Colonies, it was exported to England; and is even now occasionally sent abroad. It might be carried to China where it is esteemed. It grows so copiously that there will be no need to cultivate it; but when it may become expedient to produce more, it will be

very easy to raise it by planting slips of the roots in ditches and swampy grounds. To prepare the roots for use or exportation they must be dug, cleaned and dried. The best time to collect them is the spring and fall.

Cattle will not eat this plant, and it is noxious to insects; the leaves, therefore, may be used to advantage against moths and worms. This is owing to their strong smell. Leather can be tanned by the whole plant.

The blossoms appear in May or June; they are yellow and crowded on a thick spike or spadix.

QUALITIES—A chemical examination of the roots, evinces the presence of Tannin, Amarine, and an essential Oil, in which resides the aromatic smell; but this last can only be obtained in the proportion of half per cent. The bitter principle is better soluble in water than alcohol.

PROPERTIES—The roots are warm, aromatic, pungent and bitter. They are deemed stomachic, tonic, corroborant and carminative. The infusion in wine or spirits becomes bitter, but acquires a nauseous flavour. The infusion in water preserves the fine smell, and becomes pleasantly warm and bitter.

It is useful in disorders of the stomach, flatulency, vertigo, cholics, dyspepsia, &c.; candied roots and the extract, or chewing the roots and swallowing the juice, are efficient in those cases.—The warm infusion like tea, cures the wind cholic of infants, sailors, &c.

The dose of the extract is half a drachm. When

the root is masticated, a copious salivation is produced, which has cured the tooth ache. Children are fond of this root in many places, and may be indulged with it; the taste is spicy and pleasant. The candied roots are palatable and much used in Asia.—This root enters into many compound preparations, theriaca, mithridate, &c.

It has been recommended in intermittents, which it has cured when the bark had failed; but more effectual tonics, may be used.

SUBSTITUTES—*Panax quinquefolium* or Ginseng—*Anisum* or Aniseed—*Angelica*—*Illicium*—*Solidago odora* or Golden Rod—*Frasera* or Columbo—with all mild tonics and aromatic-bitter substances.

REMARKS—The *Iris pseudo-Acorus* of Europe does not grow in America, and cannot be mistaken there for this. Some other Iris roots (*I. florentina*, *I. versicolor*, &c.) which are also sweet scented, but more agreeable, may be distinguished by the violet smell.

Henry calls this *Acrous!* and gives a bad figure of it.

No. 2.

ADIANTUM PEDATUM.

English Name—AMERICAN MAIDENHAIR.

French Name—Capillaire du Canada.

German Name—Frauenhaar.

Officinal Names—Capil Veneris, Herba Veneris. Filix Veneris.

Vulgar Names—Maiden-hair, Rock-fern, Sweet-fern.

Authorities—Linnæus, Michaux, Pursh, Schoepf, Charlevoix, French Dispensaries, &c. not in Barton nor Bigelow.

Genus Adiantum—Fern with divided Frond. Fructification in small interrupted marginal lines. Integument univalve, opening below.

Species A. Pedatum—Petiole glossy pedate dichotome. Frondules pinnate, folioles alternate, petiolate, oblong, trapezoid, entire before and below, jagged and fructiferous on the upper margin, obtuse and crenate at the end.

DESCRIPTION—Root Perennial, large, fibrous, brown. Frond about a foot high; stems or petioles of the Frond smooth, compressed, contorted, shining or glossy chesnut color, forked upwards, and each branch bearing upwards from four to seven frondules, the first being the largest, which gives the pedate appearance. These frondules are pinnate,

No. 2.

ADIANTUM PEDATUM.

AMERICAN MAIDENHAIR.

elongated, having each from twenty to sixty distichal folioles, which are inserted by a corner, and a small petiole. The shape is oblong quadrangular, the outside or end being rounded and crenate, while two sides are square and entire; but the upper side is jagged and bears the fructification. Color pale green, surface smooth, with many oblique nerves.

The fructification is marginal on the upper border of the folioles, of a pale yellowish color, formed by unequal and irregular marginal lines. The integument is membranaceous, growing from the margin in transversal lines, which extends under it, and open transversally below, showing the cluster of small granular capsuls which they inclose.

HISTORY—The *Adiantum Capilveneris* of Europe is the type of this genus, and has long held there a rank in medical plants, as a mild pectoral. The specific name meaning *hair of Venus*, is of old standing; the English, French and German names derive from it.

A. pedatum possessing the same qualities, being larger, and more common, has long been an article of exportation from Canada, &c. to Europe; where it has gradually superseded the other, although it is less fragrant. The specific name indicates the pedate appearance of the Frond or foliage, the whole of which is used and being very easily dried, like all ferns, is packed up in bags. It is from Canada and Nova Scotia that most is sent, and spread all over Europe; but it could be sent from many other quarters since it grows all over the United States from

New England to Missouri and Virginia. It becomes more scarce in the South, being confined to the mountains. It delights in rich soil and deep woods, but is also found on hills and among rocks. It may be collected at any time; but must not be mistaken nor blended with the Sweet fern shrub, *Comptonia Asplenifolia*, which is a shrub with fragrant leaves.

This genus belongs to CRYPTOGAMIA *Filices* of Linnæus. The natural order of Ferns or FILICES is very easily known by having a Frond or flat foliage, bearing an inconspicuous fructification in lines or dots without flowers. All the ferns have a peculiar smell, rather grateful, and more or less fragrant; it is very perceptible in the Brake or *Pteris aquilina*, the *Thelipteris*, *Driopteris*, &c. Although but slightly unfolded in the *A. pedatum*, yet it gives a flavor to its decoction or syrup.

QUALITIES—The active qualities of this fern, reside in its mucilage united to a small portion of aroma and tannin. The same principles are found in various proportions in all the other medical ferns.

PROPERTIES—Pectoral and expectorant, mucilaginous, subastringent, subtonic. It is used in decoction or syrup. The celebrated *Syrop de Capillaire* of the French is made with it, which is a pleasant summer drink, and popular pectoral remedy throughout Europe, although little known in America, except among the French and Germans. It is found useful in all coughs and hoarseness, also in asthma and tickling of the throat, and even in pleurisy and all disorders of the bronchia, larynx and breast.

Its properties as a promoter of secretions, and a cure for the jaundice are doubtful. But it strengthens the fibres and promotes expectoration. It is a very good vehicle and auxiliary for pectoral remedies, and even for cathartics, such as Croton-oil, Castor-oil, &c. which are rendered palatable by it. Liquorice may be added to the decoction, instead of sugar, to render it more efficient.

Influenza is often cured by using some of the syrup to sweeten its own decoction or any other suitable herb tea. It has the advantage that it may be used ad libitum, or in any chosen dose. My own experience has tested the value of this plant and its syrup, in cough and influenza, and I can recommend the following cathartic, as one of the most effectual and withal pleasant to the taste: One single drop of Croton Oil dissolved in a spoon-full or cup-full of this syrup.

Substitutes—*Althea officinalis* or Marsh Mallow—*Agrimonia*—Violet flowers—*Gaultheria procumbens* or Mountain Tea—*Tussilago* or Coltsfoot—*Pulmonaria Virginica* or Lungwort—*Inula Helenium* or Elecampane—*Evonymus atropurpureus* or Wahoon—*Crategus crusgalli* or American Hawthorn—*Marrubium Vulgare* or Horehound, and many sweet *Filices*, &c. &c

Remarks—In Henry's herbal the figure of this plant is nothing like it; perhaps the *A. capilveneris* is meant; which, however, does not grow in America.

No. 3.

AGRIMONIA EUPATORIA.

English Name—COMMON AGRIMONY.
French Name—Aigremoine Commune.
German Name—Gemeine Oderminig.
Officinal Names—Herba Agrimonia.
Vulgar Names—Cockle-bur, Stickwort, &c.
Authorities—Linnæus, Decandolle, Michaux, Pursh, Henry, Schoepf, Dispensaries, &c.—Not in Bigelow nor Barton.

Genus Agrimonia—Calyx permanent urceolate five toothed, bristly outside. Corolla with five petals inserted on the calyx. Stamina twelve to fifteen inserted on the calyx. Two germens, two styles, and two seeds surrounded by the calyx—Leaves pinnate.

Species A. Eupatoria—Stem simple; leaves interrupted pinnate, folioles opposite, sessile, oval, oblong, deeply serrate, the terminal petiolate; interfolioles short and jagged.

DESCRIPTION—Root Perennial—Stem hairy, rounded, one or two feet high, seldom branched — Leaves alternating, the inferior larger, hairy, pinnate or compound, having from five to nine larger folioles and some smaller ones interposed, which are broad but short, and much divided. All the folioles are sessile and opposite except the last. Shape oval or oblong, acute at both ends, margin deeply and unc-

No. 3.

AGRIMONIA EUPATORIA.

COMMON AGRIMONY.

qually serrated. Inflorescence in a terminal slender spike.

Flowers small, sessile. Calyx green, bearing the Corolla and Stamina, bristly, five toothed. Corolla yellow, with five oblong petals. Stamina yellow, short, anthers oval. Fruit, a small green bur, formed by the permanent Calyx, enclosing two seeds, convex outside, flat inside, and crowned by the two styles. This bur often sticks to clothes, like other bristly burs.

HISTORY—This plant has a wide range, being found in Europe, Asia, and North America, with hardly any change. It has been deemed medical very anciently, and although not very powerful, is not destitute of efficiency.

The Genus contains but few species; the *Agrimonia parviflora* is another found in North America, and probably equal in properties; it merely differs from this by narrower leaves, more numerous folioles, longer slender spike, and smaller flowers, but more fragrant. The *Agrimonia Eupatoria* is spread from Canada to Missouri and Carolina, and grows in woods, fields, glades and near streams. The *Agrimonia parviflora* is more common in the west and south. Both blossom in summer. The whole plant is used and is slightly fragrant.

The Genus belongs to the natural order of ROSACEA or RHODANTHES, next to *Poterium* and *Waldsteinia*. In the Linnean arrangement it is placed in DODECANDRIA *Digynia*. The name is a classical one, and *Eupatoria* comes from Eupator, to whom many

useful plants were dedicated by the Greeks: here it is employed for the species, while in *Eupatorium* it becomes a generic denomination.

QUALITIES—Similar to Adiantum; but it has less mucilage, and more tannin, with some gallic acid. The Aroma is different, rather similar to that of Melilot or Clover.

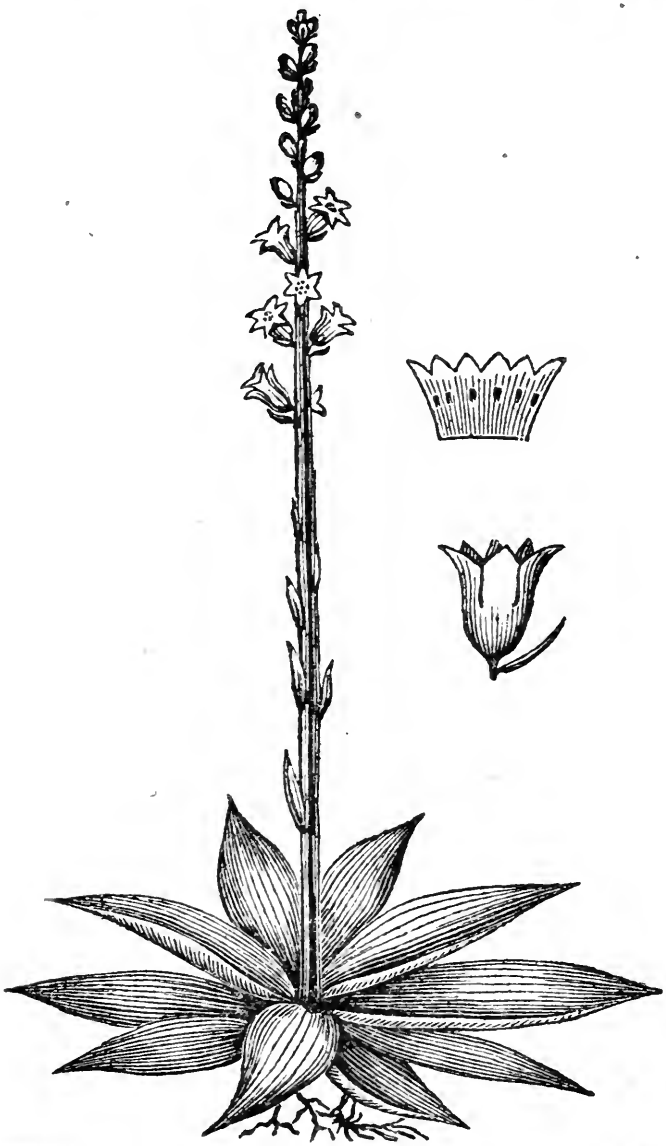
PROPERTIES—A mild astringent, tonic and corroborant. Useful in coughs, and bowel complaints. Being a very mild astringent it may be given in diarrhea, dysentery and relaxed bowels. It has been recommended in many other complaints, and is said to have cured the asthma. The best way to take it, is in a strong decoction sweetened with honey or Maiden-hair syrup. The dose is four cups every day. Both root and plant may be boiled.

SUBSTITUTES—*Adiantum pedatum* or Maiden-hair—*Solidago odora* or Golden-rod—*Geum virginicum*—*Glechoma Hederacea* or Ground Ivy—Rose flowers and all mild vegetable astringents.

REMARKS—This is one of the few plants which Henry has not altogether mistaken either in name or figure; yet his figure has both leaves and flowers too large and too sharp.

No. 4.

ALETRIS FARINOSA.



MEALY STARWORT.

No. 4.

ALETRIS FARINOSA.

ENGLISH NAME—MEALY STARWORT.
FRENCH NAME—ALETRIS MEUNIER.
GERMAN NAME—MEHLIGE STERNGRASS.
OFFICINAL NAME—Aletris Radix.
VULGAR NAMES—Star-Grass, Blazing Star, Aloroot, Bitter Grass, Unicorn Root, Ague Root, Ague Grass, Star-root, Devil's-bit.
AUTHORITIES—Linnæus, Wildenow, Michaux, Schoepf, Pursh, Elliot, Cutler, Bigelow Mat. Med. fig. 50 bad, Bigelow Sequel, &c.

Genus ALETRIS—Perigone simple, corolliform, tubular, persistent, six cleft, wrinkled, six stamina inserted at the base of the segments. Germ one oblong. Style one triangular tripartible. Capsul three celled, many seeded, opening at the top—Leaves radical, stem simple, scaly, flowers in a slender spike.

Species AL. FARINOSA—Leaves lanceolate mucronate membranaceous, scales adpressed, subulate, flowers cylindrical, white, farinaceous.

DESCRIPTION—Root perennial small, black outside, brown inside, ramose, crooked—Radical leaves from six to twelve, spreading on the ground like a star ; but all unequal in size, sessile, lanceolate, entire, very smooth, membranaceous, with many longitudinal veins, sometimes canaliculate, very

sharp at the end: they are of a pale green or glaucous, and bleach in winter or by drying; the longest are four inches—Stem from one to two feet high, very simple and upright, scapiform or nearly naked, with remote scales, whitish, adpressed, sometimes changing into leaves, subulate, acute.

Flowers white, forming a long slender scattered spike; each flower has a minute bract and very short pedicel; shape oblong, spreading into six acute segments like a star at the top, the outside has a mealy, rugose appearance—six short stamina are inserted near the mouth, anthers cordate. Germ one, central (not inferior) pyramidal. Style one, separable into three. Capsul triangular, clothed by the perigone, triangular, three valved at the top, three celled, and with many central minute seeds.

HISTORY—A true natural genus peculiar to North America, and containing two species very similar to each other. The *A. Aurea* differs merely by narrower leaves, and yellow flowers more campanulate. The *A. fragrans*, and others of Africa, must form a peculiar genus, the *Osmanthes*, different from this in habit and fruit. Both American species have the same properties.

This genus does not belong to *Liliacea* nor *Asphodelides;* but to ALOIDES, next to *Aloes* and *Crinum*, in the natural arrangement. In the Linnæan it ranks in HEXANDRIA *Monogynia*. Aletris means a miller in Greek, and *farinosa* means mealy in Latin; both names allude to the mealy appearance of the flowers.

This species has a wide range, being found from New England to Georgia, and west to Kentucky and Missouri. But the *A. Aurea* is confined to the south from Carolina to Alabama. The A. farinosa is also more abundant in the south, and always confined to dry and poor soils, in sunny glades and fields. It is unknown in the rich limestone soils and alluvial regions. In Kentucky and the west it is confined to the hilly glades, open prairies and barrens of the knob-hills. It is estival, blossoming in June and July.

Many vulgar names given to it are common to other plants, dissimilar in properties if not in aspect.

The *Veratrum luteum* or *dioicum* which is also called Star-grass, may be distinguished by its thick plumose dioical spike. The *Sisyrinchium*, another Star-grass, has single, blue and triandrous flowers, besides long grass leaves. Unicorn-root is also a name of *Veratrum* and of *Neottia*. Ague-root is a name applicable to a dozen roots. Such is the confusion arising from vulgar names. The root is the part employed, and being small, does not afford much hope to become an article of trade.

Qualities—The root contains an intense bitter emulsive resin, soluble in Alcohol, somewhat similar to Aloes, but less cathartic. This bitter principle is also partly soluble in water. The tincture is rendered milky by water. The resin is therefore different from Amarine and Aloine, and is perhaps a peculiar compound, *Aletrine*, formed by Amarine, an oil and a gum.

No. 5.

ANDROMEDA ARBOREA.

SORREL TREE.

No. 5.

ANDROMEDA ARBOREA.

English Name--SORREL TREE.
French Name—Andromedier.
German Name—Sauer Baum.
Officinal Name—Andromeda folia, lignum, &c.
Vulgar Names—Sour Tree, Sour Wood, Elk Tree, Elk Wood, Sorrel Wood, Sour Leaf.
Authorities—Linnæus, Clayton, Michaux Flora and Sylva, Pursh, Elliot, Schoepf, W. Barton Flora fig. 30.

Genus Andromeda—Calix minute five parted. Corolla ovate or cylindric, border five cleft. Stamina ten inclosed equal. One Pistil superior inclosed, style pentagonal. Capsul five celled, five valved, valves septiferous, many minute seeds.

Species A. Arborea—Leaves petiolate, oblong acuminate, smooth, beneath glaucous ; Panicle terminal and loose, flowers racemose and lateral. Corolla ovoid pubescent, anthers linear mutic.

DESCRIPTION—A small tree from fifteen to forty feet high, seldom fifty to sixty. Branches cylindrical, slender. Bark of the stem light brown, of the old branches reddish, of the young shoots green.

Leaves large, crowded, alternate and petiolate, from three to six inches long, from one to two broad, oblong, base acute, end acuminate, margin often un-

dulate, entire, or sometimes serrulate, nerve with regular veins, surface smooth, glossy, green above, glaucous beneath, the young leaves are slightly downy at first.

Flowers white, terminal, one third of an inch long, forming a large, loose panicle, composed of many long and loose racemes, bearing each from twelve to twenty flowers pedunculate, alternate and secund—Calix small, greenish, with five acute teeth—Corolla pubescent ovate with five acute teeth—Stamina and Pistil inside of the Corolla; ten equal filaments, anthers small mutic linear—Pistil one, germ oval, style pentagonal persistent, stigma obtuse—Capsuls ovate mucronate, reddish brown, with five cells containing many small subulate seeds, imbricate and membranaceous.

HISTORY—The Genus *Andromeda* belongs to the natural order of ERICIDES or extensive heath tribe; and to DECANDRIA *Monogynia* of Linnæus. The name is poetical or mythological, being dedicated to the Nymph Andromeda.

This species is the largest and the only tree of the genus, whence its specific name; all the others being shrubs, many of which are ornamental like this, and mostly native of North America. This tree attains its largest size in the most southern states; but becomes almost a shrub in Tennessee and Kentucky. It blossoms in May.

The common names of this tree have all a reference to the acidity of the leaves and wood. The elk and deer eat those leaves, and even cattle like them.

They are palatable and allay thirst when chewed by the hunters in want of water.

Locality—The Alleghany mountains, and the hills and valleys diverging from them, as far as their most southern limits in Georgia and Alabama; but seldom met north of Virginia and Kentucky, although Schoepf gives New York as its northern range. It is unknown in the alluvial and limestone regions.

Qualities—A fine acid, (is it the malic acid?) similar to that of the cranberries and whortleberries is diffused throughout this tree, and most unfolded in the leaves; but united to some astringency owing to a mixture of gallic acid.

PROPERTIES—The leaves and wood are a fine astringent acid, refreshing, cooling, allaying thirst, and antifebrile. Clayton says that a decoction of the leaves mitigates the ardour of fevers, and helps their cure. It is useful in all cases where a refrigerant astringent is needed. A kind of lemonade can be made with it. It may be substituted to the *Rhus glabrum*, or shumac, and the cranberries. Like shumac the leaves impart a black color to wool. The wood is soft, reddish, and will not burn; but like the buckeye wood may be used to make chip hats and paper.

Substitutes—Shumac berries—Pomegranate—Strawberries—Cranberries—Currants—Sorrels, &c.—with many other mild vegetable astringents and acids.

Remarks—B. Barton mentions the *A. Mariana* another species as pernicious, but a decoction of it useful in ulcers of the feet, for which this might be perhaps substituted.

No. 6.

ANTHEMIS COTULA.

English Name—WILD CAMOMILE.
French Name—Camomile Puante.
German Name—Stinkende Kamille.
Officinal Names—Cotula, Camomila Spuria.
Vulgar Namer—May-Weed, Dog's Fennel, Dilly, Dilweed, Fieldweed, &c.
Authorities—Linnæus, Wildenow, Pursh, Lamark, Schoepf, Dispensaries, Bigelow Seq. W. Barton Mat. Med. fig. 14.

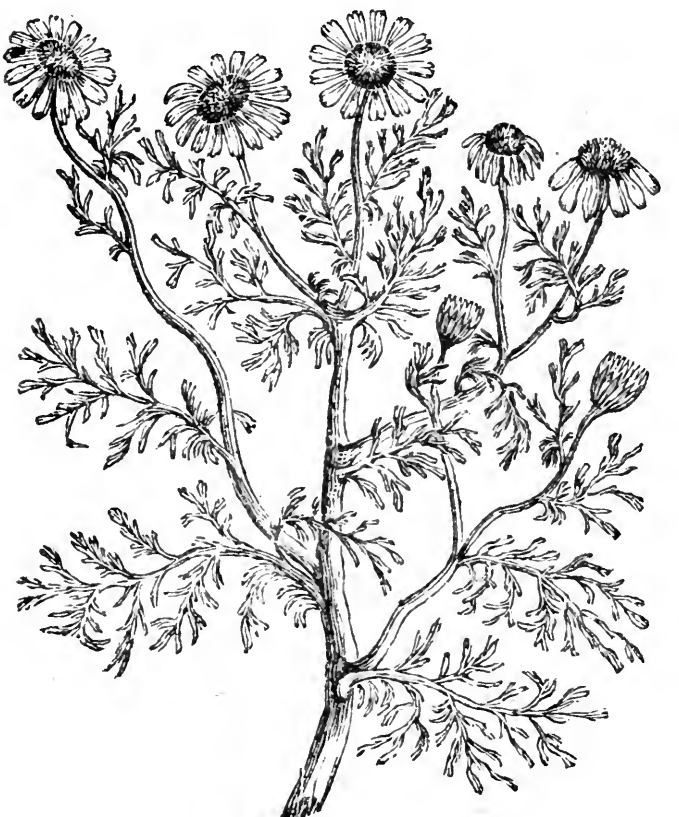
Genus Anthemis—Flowers compound radiate Perianthe hemispherical imbricate. Rays above five, female. Phoranthe conical, chaffy. Seeds naked.

Species A. Cotula—Annual puberulent, stem angular, furrowed, branched. Leaves bipinnatifid, sessile, carinate, pinnules linear, acute. Peduncles grooved, naked, thicker above; chaff bristly, seeds obovate, four sided, furrowed.

DESCRIPTION—Root annual, crooked, fibrous. Stem and leaves covered with short, adpressed, wooly hairs. Stem from one to two feet high, erect and very much branched, irregularly angular and striated; branches corymbose. Leaves alternate sessile, flat, doubly pinnatifid, or almost pinnate, carinate beneath in the middle; pinnules flat unequal, linear, acute, entire or trifid.

No. 6

ANTHEMIS COTULA.



WILD CAMOMILE.

Flowers many, forming a terminal corymb; each on a naked peduncle, erect, grooved and thicker upwards. Perianthe or common calyx, hemispherical, imbricated hairy, rough; scales linear, pale green, nearly equal, scariose on the margin and end. The central florets of the disk are numerous and bright yellow; those of the rays are ligular, from seven to twelve, and white. Phoranthe or common receptacle conical, covered with short bristly chaff, or palea.

Central florets tubular, glandular, five-toothed, with five stamina, anthera united. Germ inferior obovate. Style filiform bifid. Stigmas two filiform reflexed.

Rays or ligular florets without stamina, oblong, two nerved, bidentate or tridentate at the end.

Seeds brown, obovate, four sided, grooved and tuberculated.

HISTORY—The genus COTULA of Tournefort has been blended with ANTHEMIS by Linnæus, from which the naked seeds, without a membranaceous appendage, and the conical instead of convex phoranthe, partly distinguish it, so as to allow of a subgenus or section at least.

There appears to be some differences between the *A. Cotula* of the north and south of Europe and our American plant; but although the various botanical descriptions offer several trifling diversities, they hardly amount to specific distinctions. Our description applies to the American plant. The European is smoother, more fetid, and sometimes described with bipinnate leaves, and trifid folioles. I have

seen both, and once had distinguished this by the name of *A. Cotuloides;* but being unwilling to innovate in this work, I have followed our Botanists in uniting the plants of both continents, although I greatly doubt the botanical propriety of it.

It blossoms from June to November, affording a profusion of flowers in succession, of the size of Camomile, but never double. The whole plant has a strong graveolent smell, disagreeable to some persons, but not fetid. It is not eaten by cattle nor domestic animals.

The name of *Anthemis* is Greek, and applies to the profusion of flowers. *Cotula* is a diminutive of *Cota*, another plant of the same genus.

Anthemis belongs to the natural tribe of RADIATES, section of *Anthemides*. In the Linnean system it is placed in class SYNGENESIA. Order *Polygamia Superflua*.

Abundant as it is, the collection of it becomes easy; the whole plant may be dried when in bloom, or the blossoms alone may be collected.

LOCALITY—Our plant is indigenous and not naturalized as mentioned by some Botanists. It is spread all over the United States from Maine to Louisiana; but confined almost every where to open fields. It is never found in woods, but delights in the sun, road sides, stony places and old fields, or near towns and villages. It is scarce in mountains, but prefers the limestone soils and plains. It is extremely abundant on the Ohio and in the Western States, covering neglected fields, and alternating in fallows with the Iron-

weed or *Vernonia*. It is deemed a troublesome weed, although being annual it is easily destroyed by early ploughings.

QUALITIES—Graveolent, bitter, and nauseous; the smell of the plant resides in a Volatile Oil, possessed of a strong or graveolent aroma, and diffused throughout the plant, although more concentrated in the flowers. It is similar to the smell of Camomile, but more pungent, and less balsamic. This oil is bitter and communicates a bitterish acrid taste to the whole plant.

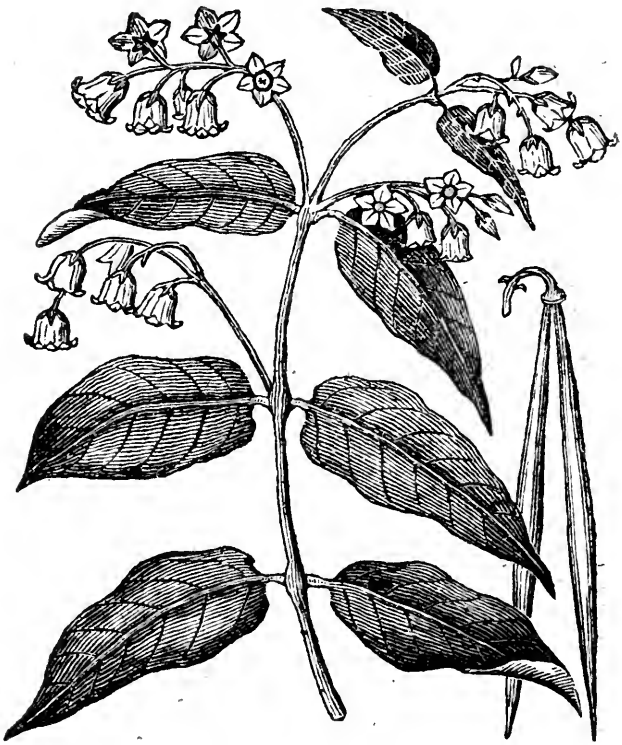
PROPERTIES—The same as those of Camomile, but weaker and less pleasant to the taste: it may be substituted thereto with safety. It is an active tonic, sodorific, stimulant, anodyne, emetic, and repellent; extensively used throughout the country for rheumatism, hysterics, epilepsy, dropsy, asthma, scrofula, &c. both internally and externally. The external use in warm baths or fomentations is proper in rheumatism, hysteric fits, suffocations, hemorrhoidal swellings, pains and contusions. The decoction and infusion are given for colds, fevers, rheumatism, asthma, &c. but a single cupful, if too strong, may produce vomiting, and even a weak infusion nauseates the stomach. It acts always as a sudorific, promoting copious sweating, and is often beneficial as an auxiliary to an emetic. In large doses it becomes emetic: in small ones it is a gentle tonic and diaphoretic, useful whenever it is needful to promote perspiration in fevers. Its advantages in epilepsy, dropsy and scrofula, are doubtful. The European plant is said to blister the hands, which is not the case with ours.

Substitutes—Camomile or *Matricaria Chamomila*—*Eupatorium perfoliatum*—*Ruta vulgaris* or Rue—*Hedeoma pulegioides* or Penny-royal—*Marrubium Vulgare* or Horehound—*Achillea millefolium* or Yarrow—*Tanacetum* or Tansey, with all the graveolent bitter tonics and sudorifics.

Remarks—The figure in Henry's, under the name of Mayweed, is quite fictitious, having entire leaves; but his article applies to this plant.

No. 7.

APOCYNUM ANDROSEMIFOLIUM.



BITTER DOGSBANE.

No. 7.

APOCYNUM ANDROSEMIFOLIUM.

ENGLISH NAME—BITTER DOGSBANE.
FRENCH NAME—APOCYN AMER.
GERMAN NAME—FLIEGEN FANGEMDES.
OFFICINAL NAME—Apocynum radix.
VULGAR NAMES—Milk-weed, Bitter-root, Honey-[illegible]m, Catchfly, Flytrap, Ipecac.
AUTHORITIES—Linnæus, Kalm, Michaux, Pursh, Schoepf, Elliot, Bigelow, fig. 36, &c.

Genus APOCYNUM—Calyx five cleft. Corolla bell shaped, five cleft. Five Corpuscles surrounding the germ. Five Anthers alternating with them, connivent and adhering by the middle to the stegyne or cover of the pistils, which are two, small and concealed; succeeded by two follicles, with numerous downy seeds.

Species A. ANDROSEMIFOLIUM—Smooth, stem erect, dichotome; leaves petiolate, opposite, entire, acute; cymes nodding, lateral, and terminal, beyond the leaves. Follicles linear.

DESCRIPTION—Root perennial, large, bitter and milky like the whole plant. Stem very smooth as well as the leaves, lactecent and with a tough fibrous bark: from three to five feet high, with few branches and leaves, cylindrical, often rose coloured: forked several times upwards. Leaves opposite, petiolate,

pale beneath, ovate, acute, entire, two or three inches long, with one large nerve.

Flowers on cymose racemes, lateral and terminal; always longer than the leaves, lax nodding and few flowered. Minute acute bracts on the peduncles. Calyx short, five cleft, acute. Corolla white, tinged with red, similar to a little bell, divided into five spreading acute segments at the top. Stamina five, with short filaments, anthers connivent arrow shaped, cohering with the stegyne or singular body covering and concealing the pistils, (mistaken for a stigma by many Botanists): it is thick and round. Five glandular corpuscles, (called nectaries by some,) alternate with the stamina. Two pistils ovate, concealed, two sessile stigmas. Fruit a pair of follicles, slender, linear, acute, drooping, cylindrical. Seeds numerous, oblong, embricate, seated on a central receptacle or spermophore, and crowned by a long down.

HISTORY—A pretty and interesting plant belonging to a very distinct genus, which gives name to a large natural tribe of plants the APOCYNES, distinguished by the singular stegyne, double follicles, &c. In the Linnæan system they are put in PENTANDRIA *digynia*, although the stegyne was mistaken for a single stigma.

Apocynum means dogsbane in Greek, and the specific name implies the similitude of the leaves to *Androsemum*. There are some other species of the same genus in North America, but none so pretty. All have small white flowers, while in this the flow-

ers are larger, flesh or rose coloured. The *Ap. cannabinum* has been used by the Americans to make a kind of hemp: the fibrous tough bark of all the species are calculated to afford it by maceration. All have a bitter milky juice, and yet the flowers smell of honey, and produce that sweet substance.

Bees and other insects, collect this honey; but small flies are often caught by inserting their proboscis between the fissures of the anthers, where it is not easy for them to extricate it; they are often seen dead in that confined situation, after unavailing struggles. Whence one of the names of this plant, Catch-fly. No animals eat it.

Locality—Rather a common plant, found from Canada to Georgia and Missouri. It grows in woods, hills, dry or sandy soils, along fences, and over old fields: it is rare in limestone soils, and rich land. It blossoms in summer from June to July.

Qualities—Kalm has mentioned this plant to be poisonous and blistering like *Rhus Vernix;* but it is quite harmless. The root when chewed has an intensely bitter and unpleasant taste, perceptible in the whole plant in a lesser degree, except the flowers, and arising from the bitter milk it contains. The decoction is of a red colour and very bitter. The spirituous solution is colourless but bitter. It contains therefore a bitter principle soluble in water and alcohol. and a colouring principle not soluble in alcohol; besides a volatile oil and caoutchouc.

PROPERTIES—This is a very active plant, highly valued by the Southern Indians. It is tonic.

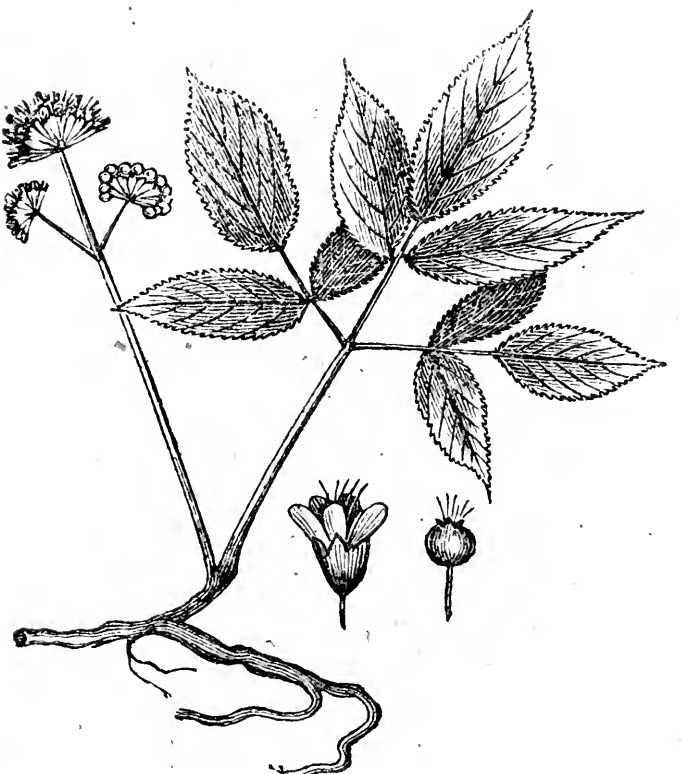
emetic, alterative and syphilitic. The root is the most powerful part: but it must be used fresh, since time diminishes or destroys its power. At the dose of thirty grains of the fresh powdered root, it acts as an emetic, equal to Ipecacuana; in smaller doses it is a tonic, useful in dyspepsia and fevers. The Chickasaw and Choctaw Nations employ it in syphilis, and consider it a specific, they use the fresh root chewed, swallowing only the juice. This later use has been introduced into Tennessee and Kentucky as a great secret. It must act as a tonic in all those cases, tonics being often emetic and antivenereal. An objection to this plant is its nauseous bitter taste. Many substitutes may be found of a less disagreeable nature.

Substitutes—*Ipecacuana—Eupatorium perfoliatum—Prenanthes opicrina—Lobelia siphilitica—Aletris farinosa—Sanicula marilandica—Euphorbia Corollata & E. Ipecacuana—Frasera—Mezereon—Guayacum*, &c. and all bitter tonics or emetics.

Remarks—Barton and Henry have not mentioned this plant. Bigelow represents it with leaves too sharp or acuminate. All the other species of the same genus have the same properties in a lesser degree. The *A. cannabinum* is distinguished from this by smaller leaves and flowers in shorter panicles; while the *A. hypericifolium* has prostrated stems with narrow leaves, and grows only on the banks of streams and lakes.

No. 8.

ARALIA NUDICAULIS.



SMALL SPIKENARD.

No. 8.

ARALIA NUDICAULIS.

English Name—SMALL SPIKENARD.

French Name—Petit Nard.

German Name—Nardwurzel Aralie.

Officinal Names—Aralia radix, Nardus Americanus.

Vulgar Names—Spiknard, Sassaparil, Sarsaparilla, Wild Liquorice, Sweet-root.

Authorities—Linnæus, Wildenow, Michaux, Pursh, Schoepf, Colden, Dispensaries, Bigelow Sequel.

Genus Aralia—Calix united or superior five-toothed. Petals five entire. Stamina five epigyne alternate. Pistil united to the calix, five styles and stigmas. Berry crowned by the calix and styles, five celled, five seeded—Flowers in simple umbels.

Species A. Nudicaulis—Stem naked, straight, smooth, bearing three umbels without involucrum: leaves radical, biternate; folioles ovate, acuminate, serrulate.

DESCRIPTION—Root perennial, brown, yellowish, cylindrical, creeping twisted, sometimes many feet long, thickness of the finger. One stem and one leaf mostly rising together, and less than two feet high. The stem is straight, leafless, cylindric, with three small simple naked umbels at the end. Leaf

biternate or with nine folioles, the lateral ones sessile, the terminal ones petiolate, all ovate, oblong, rounded at the base, end acuminate, margin serrulate, surface smooth. Sometimes some folioles are coalescent.

Flowers from twelve to thirty in each umbel, pedunculate, small, yellowish. Calix greenish, obconical, united to the pistil, crowned with five teeth. Petals five, oboval, obtuse, yellowish white. Five stamina and five styles filiform. Berries small, round, similar to Elder berries in size.

HISTORY—The genus *Aralia* is the type of a natural tribe the ARALIDES, to which *Panax* or Ginseng belongs likewise ; this last differing only by having two styles and two cells instead of five. This family differs from the UMBELLATE by producing berries instead of two seeds. All the plants of this genus and family have active properties. Two other American species *A. racemosa* and *A. hispida*, have the same properties as this, and may be used for each other. The *A. spinosa* or Angelica Tree partakes of the same, and also of the properties of Angelica root and *Xanthoxylum.*

Aralia belongs to PENTANDRIA *pentagynia* of Linnæus.

This species blossoms in summer. It is often called Sarsaparilla, the root being similar to that article, and having similar properties. It might become an article of trade as such, and deserves to be cultivated.

LOCALITY—Found from New-England to Carolina, and Indiana, more common in the north than the

south : it delights in deep woods, shady groves and valleys, good soils, &c.

QUALITIES—The whole plant is balsamic, fragrant, and has a warm aromatic sweetish taste ; most unfolded in the root and berries. They contain mucilage, aroma, and an essential milky oil or balsam.

PROPERTIES—All the Spikenards or Aralias are popular medical plants throughout the United States : they made part of the Materia Medica of the native tribes, and are extensively used by country practitioners. They are vulnerary, pectoral, sudorific, stimulant, diaphoretic, cordial, depurative, &c. The roots and berries are most efficient ; in *A. spinosa* the bark.

The roots bruised or chewed, or in poultice, are used for all kinds of wounds and ulcers by the Indians. Fomentations and cataplasms are useful for cutaneous affections, erysipels and ring-worms. An infusion or a decoction of the same, are efficient substitutes for those of Sarsaparilla, (and more powerful,) in all diseases of the blood, syphilitic complaints, chronical rheumatism, local pains, cardialgy, belly-ache, &c. As a pectoral both roots and berries may be used in syrups, cordials, decoctions, &c. and have been found useful in coughs, catarrh, cachexia, langour, pains in the breast, &c. The cordial of Spikenard berries is recommended for the gout, and the juice or essential oil for the ear-ache and deafness.

SUBSTITUTES—All the Aralias—Elder—Sarsaparilla—Guayac—Angelica-root—*Cunila mariana*—Sassafras—Ginseng—*Eryngium aquaticum*—*Xan-*

thoxylum or Prickly Ash—Magnolia Bark—*Collinsonia Canadensis*, &c. and many aromatic stimulants.

Remarks—Henry calls this plant *Nardus Americanus*, and his figure is fictitious, being like Fennel.

Since all our species may be substituted to each other, and we can only give the figure of one at present, it may be well to add a short notice of each.

A. racemosa or Large Spikenard—Root larger and thicker. Plant larger. Stem leafy, leaves similar to *A. nudicaulis*, but with larger and cordate folioles. Flowers in large axillary clusters, formed of many racemose umbels—Common from Canada to Alabama.

A. hispida or Rough Spikenard—Stem hispid, leaves decomposed, folioles small oval, umbels terminal, &c.—Confined to Canada, New-England, New-York, and the Alleghanies.

A. spinosa or Spikenard Tree, called also Angelica Tree, Tooth-Ache Tree, and Prickly Elder—A small tree full of thorns, leaves ample, decomposed, prickly. Flowers terminal, forming an ample panicle of umbels—From New-York to Georgia, and west to Missouri, &c.

No. 9.

ARBUTUS UVA-URSI.

BEAR-BERRY.

No. 9.

ARBUTUS UVA-URSI.

English Name—BEAR-BERRY.
French Name—Bousserole Raisin d'Ours.
German Name—Erdbeartege Sandbeere.
Officinal Name—Uva-Ursi.
Vulgar Names—Mountain Box, Redberry, Upland Cranberry.
Authorities—Linnæus, Woodville, Michaux, Pursh, J. S. Mitchell, Murray, Girardi, Dispensaries, Schoepf, Ferriar, Dehaen, B. Barton, Bigelow, fig. 6, and Sequel, &c.

Genus Arbutus—Calix five parted and free. Corolla ovate, five toothed. Stamina ten basilar, filaments hairy, anthers bifid, each part bipore. One pistil, one style, stigma simple. Berry free, five celled.

Species *A. Uva-Ursi*—Stem procumbent; leaves scattered, cuneate, obovate, entire, coriaceous: flowers in small clusters, peduncles reflexed, bracteolate: berries globular, smooth, five seeded.

DESCRIPTION—Roots perennial, creeping, slender. Stems procumbent, trailing, cespitose, radicate, the young shoots tending upwards, cylindric, cuticle pealing off. Leaves numerous, scattered, variable in shape, narrow or broad, always acute and alternate at the base, on short petiols, thick, coriaceous, evergreen;

and smooth, shining above, pale beneath, margin entire, thick or rounded, and nearly obtuse.

Flowers nearly terminal in a small racemose cluster, from six to twelve together, of a pale, rosy, flesh color. Peduncles shorter than the flowers, colored, reflexed, with some minute acute bracts, two of which in the middle. Calix colored, with five rounded acute segments. Corolla ovate, urceolate, white with a rosy tinge, transparent at the base, contracted above, hairy inside, with five acute, short, and reflexed segments or teeth. Ten equal stamina inserted at the base of the corolla, with hairy, short, cuneate filaments, anthers equal in length, bifid, each part with two pores. Germ round, style straight, longer than the stamina, stigma obtuse. A black indented and persistent ring around the base of the germ, called nectary or gynophore. Berries globular, depressed, of a scarlet color, pulp insipid, mealy, five seeds almost coalescent together.

HISTORY—The G. *Arbutus* is very near to *Vaccinium*, (whortleberry,) differing chiefly by the free calix and berry, and to *Andromeda*, which has a capsul instead of a berry for fruit. It is divided into two sections or subgenera, (by some considered as genera.) 1. *Unedo*, having a rough, many seeded berry. 2. *Mairania*, a smooth five seeded berry. To this last belongs our actual species. *Arbutus* is an ancient name, *Mairania* is dedicated to the French philosopher Mairan, *Uva-Ursi* means Bear's-grape in Latin. It was known under this last name to the Greeks, and Galen mentions it as a medical plant.

Belonging to the natural order of ERICINES, (heath tribe,) section with berries: and to DECANDRIA *monogynia* of Linnæus.

LOCALITY—This plant is scattered throughout the northern hemisphere in Europe, Asia and America. In Europe, found from Lapland to the Pyrenees and Apenines. In Asia, from Armenia and the Volga to Kamtschatka. While in America it grows from Iceland and Greenland to Hudson Bay and Alaska, extending south to Canada, New-England, the highlands, and hills of north New-Jersey. It covers dry, stony and gravelly soils, barren spots, and even sandy woods.

It blossoms late, and the red berries are ripe in winter. These are eaten by bears, and many other animals.

The leaves are chiefly used, and may be easily dried. In Sweden and Russia they form an article of trade, being used to tan Russia leather. They begin to be collected in America.

The Indians smoke them like tobacco, and call them Sagack-homi in Canada. They dye black.

QUALITIES—Taste astringent, styptic and bitterish; inodorous. It abounds in Tannin, which is the active principle, and is easily soluble in water. The other substances are mucus, resin, lime, and bitter extractive.

PROPERTIES—Astringent, tonic and diuretic. It was extolled once in Europe as a remedy against gravel; but has since been found to be only a tolerable palliative in nephritis, gravel, calculous cases,

disury, strangury, acting as an astringent, useful even when other remedies fail. Dr. Wistar, B. Barton, Mitchell, Bigelow, &c. recommend it in those cases. It has also been used for leucorhea, gonorhea, the catarrh of the bladder, menorhagia, debility, diabetes, ennuresis, disentery, ulcerations of the kidneys and bladder, and has often given relief or even cured; yet more efficient tonic remedies may be substituted.

It was once recommended in pulmonary consumption; but it only abates the hectic fever.

The powder, decoction or syrup, may be used. The doses are from five to twenty-five grains of the powder, or a wine glass of the decoction every hour. A syrup of the leaves and berries is made in Sweden, which is preferable.

Substitutes—*Chimaphila* or Pipsiseva—*Erigeron Philadelphicum*, &c.—*Heuchera* or Alumroot—*Geranium maculatum*—*Statice Caroliniana*—Asparagus—Strawberries—Tannin—and many astringents, acids, tonics and diuretics.

Remarks—The figure of Henry is fictitious.

No. 10.

ARISTOLOCHIA SERPENTARIA.

SNAKEROOT BIRTHWORT.

No. 10.

ARISTOLOCHIA SERPENTARIA.

English Name—SNAKEROOT BIRTHWORT.
French Name—Serpentaire de Virginie.
German Name—Schlangen Osterluzey.
Officinal Name—Serpentaria Virginiana.
Vulgar Names—Virginia Snakeroot, Snakeweed, Snagrel.
Authorities—Linnæus, Schoepf, Woodville, Pursh, Elliot, Catesby, Colden, Cornutus, Moseley, B. Barton, Bigelow fig. 49, W. Bart. 2. fig. 28, and all the Dispensaries, Pharmacopeias and Materia Medicas, &c.

Genus Aristolochia—Perigone tubular colored, base swelling, tube tortuose, limb labiate, often ligular. No corolla. Germ inferior: stigma sessile lobed, surrounded by six stamina epigynous sessile. Capsul six celled, many seeded.

Species A. Serpentaria—Stem simple flexuose; leaves lanceolate, cordate, entire, and acuminate: flowers bilabiate subradical, peduncles curved, uniflore, scaly and jointed.

DESCRIPTION—Root perennial, knotty and gibbose, brown and very fibrous, fibres long, small, yellow when fresh—Stems round, slender, weak, flexuose, jointed, less than a foot high, bearing from three to seven leaves, and from one to three flowers—Leaves

alternate and petiolate, oblong or lanceolate, base cordolate, end acuminate, margin entire, sometimes undulate, surface smooth or pubescent, of a pale green.

Flowers nearly radical and solitary, on peduncles curved, jointed, colored, with some small scales. Germ inferior, perigone redish or purplish, tube crooked, limb bilabiate, upper lip notched, lower entire, both short and lobular. Six sessile anthers, oblong, obtuse, attached to the sides of a large round sessile stigma. Capsul oboval, with six angles, six cells, and many minute seeds.

HISTORY—The genus *Aristolochia* requires a thorough investigation and reform, being rather a family than a genus: two subgenera at least must be made of it.

1. *Glossula.* Flowers unilabiate and ligular. True type of the genus.

2. *Pistolochia.* Flowers bilabiate and ringent. To this belong *A. serpentaria, A. ringens, A. bilabiata,* &c.

While many species widely deviating from the generic characters must form peculiar genera, such as

Siphisia. Flowers not labiate, limb equal trilobe. Such are *A. sipho, A. tripteris, A. tomentosa,* &c.

Endodeca. With twelve stamina, Ex. *A. dodecandra,* and perhaps Bigelow's *A. serpentaria.*

Einomeia. With only five stamina, capsul five celled, such as *A. pentandra,* &c.

The actual species is by no means very definite as yet. The Virginia Snakeroot of Commerce is collected from half a dozen species or varieties, *A. has-*

tata, *A. tomentosa*, and many called *A. serpentaria*, because they have consimilar leaves and roots, while the flowers are different. The *A. serpentaria* of W. Barton appears to be a peculiar variety, with long slender peduncles, having few scales and not colored, while the flowers are small, purple, and hardly bilabiate.

Bigelow's plant, which is from the Southern States, has the leaves trinervate, less acuminate, and more undulate; while the flowers are large, bilabiate and red, scales many and broad, stamina twelve! and stigma lobed convolute. This may be a distinct species belonging perhaps to *Endodeca*.

Our figure is from a large flowered variety of the western glades; but many other varieties exist there, one has broad leaves.

All these plants blossom but seldom or once in their lives, in May or June; being very similar to each other, (except *A. tomentosa*,) they are collected indiscriminately. The roots alone enter into Commerce, and sell for more than the Seneca Snakeroot. They are an article of exportation to Europe.

Aristolochia belongs with *Asarum* to the natural order of ASARIDES. Linnæus has put it into GYNANDRIA *hexandria*.

LOCALITY—In shady woods from New-England to Florida and Missouri, most abundant in the Alleghany and Cumberland mountains, scarce in the alluvial and limestone regions.

QUALITIES—The root has an agreeable, penetrating, aromatic smell, somewhat similar to Valerian and

Spruce: and a warm bitterish pungent taste. It contains pure camphor, a resin, a bitterish extractive, and a strong essential oil. By distillation a pearly fluid is produced. By infusion in alcohol, it gives a yellow or green tincture; and in water a brown liquor: the tincture is most powerful. By decoction or distillation much of its active principles evaporate.

PROPERTIES—Diaphoretic, tonic, anodyne, antispasmodic, cordial, antiseptic, vermifuge, exanthematic, alexitere, and a powerful stimulant of the whole system. It was first introduced into Materia Medica as a remedy against snake bites, whence its name, and was used as such by the Indians, with many other plants: it acts then as a sudorific and antiseptic. It is useful in the low stage of fevers to support strength and allay irregular actions: too stimulant in inflammatory fevers and disorders; but an excellent auxiliary to Peruvian bark and other tonics in intermittents, enabling the stomach to bear them, and increasing their effects. In remittent fevers it is preferable to bark. It is deservedly a popular country remedy in infusion, for pleurisy, exanthems, cachexia, catarrh, rheumatism, &c. acting as a sudorific. In bilious pleurisy it has been found highly serviceable: in bilious complaints it checks vomiting and tranquillizes the stomach. In typhus and typhoid pneumonia it has beneficial effects, promoting perspiration, checking mortification, and abating the symptoms.

Thus the Snakeroot may be deemed an active and valuable medicine, it is often associated with other tonics, and camphor, opium, valerian, &c. to increase

their action. It is probably a good substitute for camphor and valerian in many cases. The doses of the powder are from ten to thirty grains, often repeated, or an ounce of the warm infusion every three hours. Wine is an excellent vehicle for it in fevers. Many compound tinctures contain it. When too stimulant Spikenard (*Aralia*) and Elder (*Sambucus*) may be substituted to advantage.

SUBSTITUTES——Camphor——Rosemary——Seneca Snakeroot—*Eupatorium perfoliatum*—*Asarum Canadense* and *Virginicum*—All the native *Aristolochias*—*Gaultheria procumbens*, and many other tonic and diaphoretic stimulants.

REMARKS—The bark, seeds, and roots of the *A. Sipho*, (or *Siphisia glabra*,) called vulgarly Dutchman-pipe flower or Pipe Vine, may be substituted, having the same properties. It is a tall vine, with large cordate smooth leaves, and brown flowers like a pipe with a trilobe mouth, growing on the Ohio, &c.

A. tomentosa (or *Siphisia tomentosa*) is a low vine, with cordate woolly leaves, growing in the Western States.

A. hastata is a small plant, with long narrow leaves, having obtuse auricles at the base: it grows in the Southern States. The roots of these two last are often mixed with the common kind in the shops.

Henry's figure represents probably the *A. tomentosa*, but the leaves are too sharp.

No. 11.

ARUM TRIPHYLLUM.

English Name—THREE-LEAVED ARUM.

French Name—Pied-de-Veautriphylle.

German Name—Dreyblattrige Aron.

Officinal Name—Arisarum trifolium, Arum radix.

Vulgar Names—Indian Turnip, Dragon Root, Dragon Turnip, Pepper Turnip.

Authorities—Linnæus, Michaux, Pursh, Elliot, Schoepf, Dispensaries, Bigelow fig. 4, Sequel, &c.

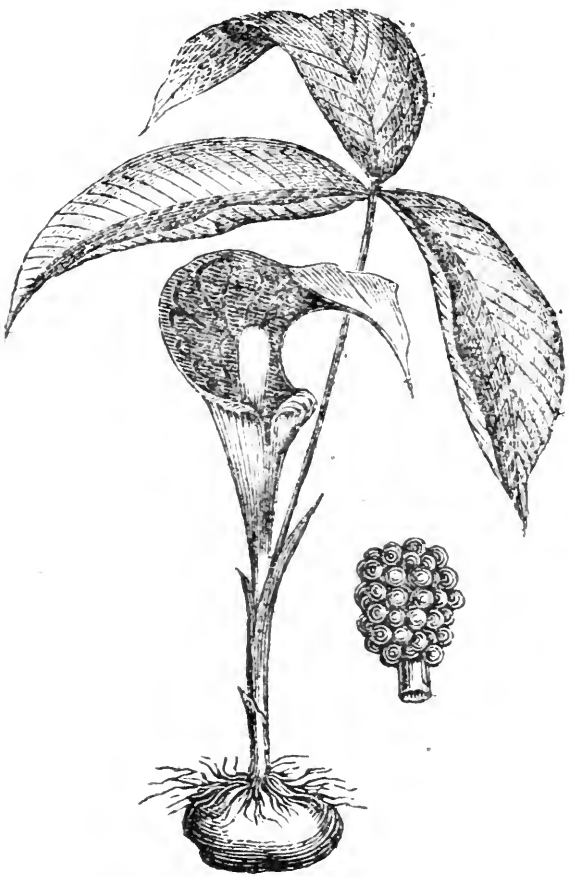
Genus Arum—Spathe univalve cucullate, convolute at the base. Spadix naked above: no perianthe. Stamina and pistils naked separated at the base of the spadix: filaments with two or four anthers; berries conglomerate, one celled, few seeded.

Species *A. triphyllum*—Leaves radical, ternate, folioles sessile, oval, acuminate, entire and smooth: scape with one spathe ovate acuminate, inflexed: spadix club shaped, shorter: flowers polygamous, trioicious.

DESCRIPTION—Root perennial, round, flattened, tuberous, with many white fibres around the base: skin dark, loose, and wrinkled.—Leaves one or two on long sheathing petiols, three folioles very smooth and sharp, pale beneath, oval or rhomboidal or oblong, entire or undulated, with regular parallel nerves.

No. 11.

ARUM TRIPHYLLUM.



THREE-LEAVED ARUM.

Scape or leafless stem, tunicated at the base by vaginated membranaceous acute sheaths, supporting one large upright spathe, tubular at the base, hooded at the top, either green or purple, or variegated with both colours in stripes within. Spadix cylindric, obtuse at the top, also variable in colour, bearing the flowers at the base where it is contracted. Some plants have only stamina, others pistils, and others have both, wherefore it is polygamous trioicious. Anthers two or four on short crowded filaments. Pistils crowded below, round, without styles, stigma punctiform. Sometimes abortive pistils and stamina intermixed. The upper part of the spadix withers with the spathe, while the pistils grow into a large compact head of shining scarlet berries.

HISTORY—*Arum* is the type of a natural family, the AROIDES, among Monocotyle plants. In the Linnæan system it has been put in *Gynandria* or in *Polyandria;* yet many species are polygamous. Linnæus did very improperly, and against his own botanical rules, change the previous name of Tournefort *Arisarum* into *Arum,* which is a mere termination of many other genera, *Asarum, Comarum,* &c.: *triphyllum* means three leaved.

The *A. tryphillum* blossoms with us from May to July, and in the summer bears its bright scarlet berries. The vulgar names are common to all the North American species, which have similar roots. Their leaves are sensible to a harsh grasp like *Onoclea sensibilis,* and the *A. dracontium* coils them when plucked. The seeds and roots may be rendered edible like

A. esculentum (notwithstanding their caustic pungency) by long coction ; they were eaten by the Indians roasted and otherwise.

Locality—All over North America in woods : it is said to extend to South America as far as Brazil ; but probably a different species is found there. All soils and regions appear to suit this plant : it delights however in good, rich, and shady grounds.

Qualities—The whole plant, and particularly the root, is violently acrid, pungent, and even caustic to the tongue, but not to the skin. It burns worse than *Capsicum* or Cayenne pepper. This active principle is a peculiar substance, *Aroine*, highly volatile, having no affinity with water, alcohol, oil or acids, and becoming an inflammable gas by heat or distillation. The roots yield one fourth of their weight of a pure amylaceous matter, like starch or arrow-root, or a fine white delicate nutritive fecula, by the same process as Cassava or *Jatropha manihot*.

PROPERTIES—Powerful acrid, stimulant, incisive, restorative, expectorant, calefacient, carminative and diaphoretic. The fresh roots are too caustic to be used internally, unless much diluted, and when dry they are often inert, unless they have been dried very quick, or kept buried in sand or earth. It must be used in substance mixed with milk or molasses, since it does not impart its pungency to any liquor ; or the fresh roots must be grated, or reduced to a pulp, with three times their weight of sugar, thus forming a conserve, the dose of which is a tea spoonful twice a day.

In these forms it is used for flatulence, cramp in the stomach, asthmatic and consumptive affections. It quickens circulation, and promises to be a useful topical stimulant when the acrid principle may be rendered available. It has been found beneficial in lingering atrophy, debilitated habits, great prostration in typhoid fevers, deep seated rheumatic pains, or pains in the breast, chronic catarrh, &c.

SUBSTITUTES—*Capsicum—Salep—Erythronium*—Squill—Arrow-root—*Polygonum hydropiper—Salvia urticifolia—Cyclamen europeum—Arum dracontium*, and other native Arums—besides *Ranunculus bulbosus*, and some other acrid pungent substances.

REMARKS—*A. dracontium* has a large pedate leaf, with five to fifteen oblong segments, and grows in the Southern and Western States.

A. virginicum has sharp, wide, cordate leaves, and grows in Virginia, &c.

A. sagitefolium has sharp, long, sagittated leaves, and grows from New-York to Carolina. All these have similar roots, seeds, and properties.

Henry has assumed the name and figure of the European *A. maculatum* for this plant.

No. 12.

ASARUM CANADENSE.

English Name—BROADLEAF ASARABACCA.

French Name—Asaret du Canada.

German Name—Canadische Haselwurz.

Officinal Names—Asari Canadensis, radix and herba.

Vulgar Names—Wild Ginger, Indian Ginger, Canada Snakeroot, Heart Snakeroot, Coltsfoot, &c.

Authorities—Linnæus, Schoepf, Michaux, Pursh, Cornut, Coxe, Dispensaries, B. Barton, W. Barton, fig 32, Bigelow fig. 15 and Sequel.

Synonyms—*A. latifolium* of Salisbury. *A. carolinianum* of Walter.

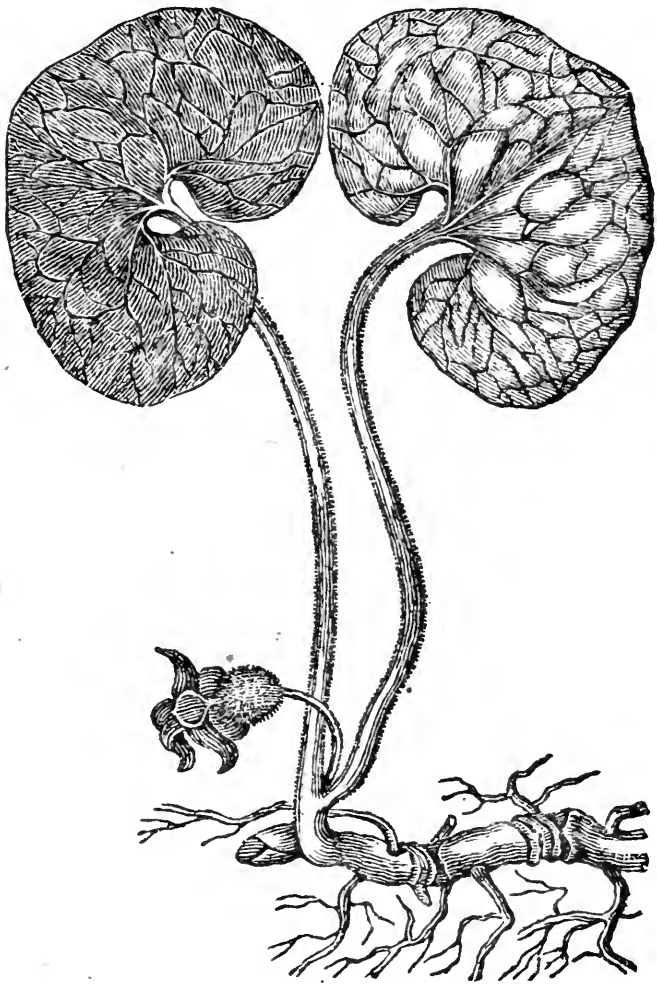
Genus Asarum—Perigone urceolate trifid. Stamina twelve epigynous, anthers adnate. Germ coalescent with the base of the perigone, style short, stigma stellated six parted. Capsul six locular, many seeded.—Stemless, leaves radical geminate, flowers solitary in the bifurcation.

Species *A. Canadense*—Leaves broad, reniform, entire, puberulent: flower woolly, tripartite, segments lanceolate reflexed.

DESCRIPTION—Roots perennial, creeping, fleshy, cylindric, jointed, with scattered fibres, brown outside, white inside.—Radical leaves, geminate, pubescent, with long and round petioles, reniform or

No. 12.

ASARUM CANADENSE.



BROADLEAF ASARABACCA.

kidney shaped, broad, entire, tip often mucronate but obtuse, surface puberulent, veined like a net work, and often spotted, glaucous beneath. No stems. Flower solitary between the two leaves, on a curved peduncle, tomentose, purple, darker inside. Perigone with three equal segments, acuminate reflexed. Stamina twelve unequal, filaments mucronate, anthers adnate laterally. Three filiform nectaries or abortive stamina, alternating with the segments. Style conical grooved, or six coalescent styles, crowned by six thick revolute stigmas. Capsul round, hexagonal, crowned, and with many small seeds.

HISTORY—A humble stemless plant, with flowers nearly concealed in the ground. It has many varieties, with small or large leaves, rounded or mucronate, spotted or unspotted ; the flowers also vary in colour from greenish purple to dark purple : they blossom in May and June.

Asarum is an ancient name, the genus gives name to a natural order ASARIDES, called *Aristolochides* by Jussieu, and *Sarmentacea* by Linnæus. In the Linnean system it is placed either in *Dodecandria* or *Gynandria*. It has been called *Canadense*, because first noticed in Canada, the name *latifolia* of Salisbury would be preferable.

The names of Wild Ginger, Heart Snakeroot, &c. are common to all the other species. The roots are often collected and sold for Virginia Snakeroot, although very different in appearance, but similar in taste, smell and properties. They deserve to be collected more extensively, as an article of trade and ex-

portation; being an excellent substitute for ginger in every instance.

Locality—From Canada to Carolina and Missouri, in shady woods, it is most abundant in hills, valleys, and rich alluvions.

Qualities—The whole plant, but particularly the root, has an agreeable aromatic bitterish taste, intermediate between Ginger and *Aristolochia serpentaria;* but more pleasant, warm, and pungent. The smell is spicy and strong. The active substances are a volatile oil, possessing the taste and smell of the plant, with a red and bitter resin, both soluble in alcohol; they contain besides much fecula and mucilage.

PROPERTIES—Aromatic stimulant and diaphoretic, cordial, emenagogue, subtonic, errhine, &c.; but not properly emetic like the *A. europeum*, although often mentioned as such. It is a grateful substitute of the Serpentaria in many cases. It is useful in cachexia, melancholy, palpitations, low fevers, convalescence, obstructions, hooping-cough, &c. The doses must be small and often repeated, since it becomes nauseous in large doses. The best preparation is a cordial made with the tincture and syrup; the tincture is coloured dark red by the resin.

The dried leaves make a fine stimulating and cephalic snuff, when reduced to powder, which may be used in all disorders of the head and eyes.

A grateful wine or beer may be made by the infusion of the whole plant, in fermenting wine or beer.

Substitutes—Ginger—*Aristolochia serpentaria*—*Aralia* species—*Helenium autumnale*—Spices—*Lau-*

rus benzoin, with many aromatic stimulants, and all the other American species of this genus.

Remarks—*A. Virginicum* may be known by its smooth cordate leaves; it is found from Maryland to Georgia and Tennessee, particularly in mountains, and is still more grateful than *A. Canadense*.

A. arifolium has smooth, hastated, spotted leaves, and a tubular flower; it is found in Carolina and Tennessee.

The figure of Henry represents the leaves sharp, which is never the case, and he calls it Swamp Asarabocca, although never growing in swamps.

No. 13.

ASCLEPIAS TUBEROSA.

English Name—ORANGE SWALLOW-WORT.
French Name—Houatte Tubereuse.
German Name—Knollige Schwalbenwurz.
Officinal Name—A. tuberosa radix.
Vulgar Names—Pleurisy root, Butterfly weed, Flux root, Wind root, White root, Silk weed, Canada root, &c.
Authorities—Linnæus, Schoepf, Michaux, Pursh, B. Barton, Chapman, Thacher, Dispensaries, Parker, Tully, Bigelow, Med. Bot. fig. 26 & Seq. W. Barton M. Med. fig. 22, &c.

Genus Asclepias—Calix quinquefid. Corolla five parted, flat or reflexed, bearing five auricles with appendages and a large central truncate stegyne, supporting and concealing the five stamina, covering the two pistils: which are succeeded by two follicles.

Species A. Tuberosa—Hairy, leaves scattered, variable, nearly sessile, oblong or lanceolate, entire: umbels with subulate bracts, flowers lax and orange color.

DESCRIPTION—Root perennial, large, fleshy, white, of variable form, fusiform, crooked or branched—Many stems either erect or ascending or procumbent, round, hairy, green or red—Leaves scattered, sessile, or on short petiols, very hairy, pale

No. 13.

ASCLEPIAS TUBEROSA.

ORANGE SWALLOW-WORT.

beneath, entire or undulate, oblong or lanceolate, or nearly linear, obtuse or acute.

Several terminal or lateral umbels, divaricate, with subulate bracts for involucre. Flowers erect, peduncled, and of a bright orange color. Calix small reflexed, five parted Corolla reflexed, five parted, segments oblong; auricles erect, nearly as long, cuculate, with incurved appendages or horns. Stegyne tough, pyramidal, having five coalescent stamina around, each with two cells and two masses of pollen suspended by a threat. Two pistils completely concealed by the stegyne; germs ovate with short styles, stigmas obtuse.—Follicles two, often abortive, lanceolate, acute, erect, downy, dehiscent laterally; seeds many, imbricate, flat, ovate, connected to a longitudinal receptacle by long silken hairs.

HISTORY—The beautiful genus ASCLEPIAS belongs to the natural order of APOCYNES, section *Asclepides*. In the Linnean system, it has been put in PENTANDRIA *digynia;* but the singular structure of the flower is such as to puzzle Botanists, and it might as well be considered as decandrous, or monadelphous! the flowers appear to have a double corolla, the inner one has five lobes called nectaries or auricles. This structure renders, however, the genus very natural and easily recognizable. It is dedicated to *Esculapius*, the ancient god of medicine, under his Grecian name of Asclepias.

This species is easily known at first sight by its bright orange flowers blossoming in July and August, among all the numerous American congeneric

species; which are upwards of thirty. It is a very ornamental plant, although inodorous, while many others are sweet scented. The roots which are nearly tuberous, have given name to it, although the *A. acuminata* is also tuberous. The *A. decumbens* of some Botanists is only one of its varieties: it is very variable in the stems and leaves.

All the Asclepias are milky; but this less than others. They all produce a fine glossy and silky down in the follicles or pods; which has been used for beds, hats, cloth and paper. This down makes excellent beds and pillows, being elastic, and one pound and an half occupying a cubic foot. Light and soft hats are made with it: the staple is too short to be spun and woven alone; but it may be mixed with flax, cotton, wool and raw silk. It makes excellent paper, and the stalks of the plants afford it likewise, as in flax and *Apocynum*. The *A. syriaca* or Silky Swallow-wort producing more of the down, has been cultivated for the purpose, and a pound of down produced from forty to fifty plants. Its young shoots are edible like poke, and the flowers produce a honey by compression.

The *A. syriaca*, *A. incarnata*, and several other species, have similar medical properties, and may be substituted to this, although somewhat less active.

Locality—Found all over the United States, but most abundant in the South; it prefers open situations, poor and gravelly soils, along gravelly streams and on hills. Rare in rich and loamy soils.

Qualities—The root is brittle when dry, and easi-

ly reduced to powder; it is somewhat bitter, but not unpleasant: it contains a bitter extractive and fecula, both soluble in boiling water. When fresh the root, as well as the whole plant, is rather unpleasant, subacrid and nauseous.

PROPERTIES—Subtonic, diaphoretic, expectorant, diuretic, laxative, escarotic, carminative, antispasmodic, &c. It is a valuable popular remedy, and a mild sudorific, acting safely without stimulating the body. It is supposed to act specifically on the lungs, to promote suppressed expectoration, and to relieve the breathing of pleuritic patients. It appears to exert a mild tonic effect, as well as stimulant power over the excretories. It relieves the dyspnœa and pains in the chest. It often acts as a mild cathartic, suitable for the complaints of children; it is also useful in cholic, hysteria, menorhagia, dysentery, &c.

In the low state of typhus fever, it has produced perspiration when other sudorifics had failed. In pneumonia and catarrh it is always beneficial. It restores the tone of the stomach and digestive powers. It has been given in asthma, rheumatism, syphilis, and even for worms.

All these valuable properties, many of which are well attested, entitle it to general notice, to become an article of commerce, be kept in shops, &c.

The doses are from twenty to thirty grains of the powdered root three times a day, or a gill of the decoction and infusion every few hours: a vinous infusion and a decoction in milk are also recommended in some cases.

Substitutes—Snakeroots—Myrrh—Spikenard—Squill——Asarabaca——Sassafras——Tolu—*Apocynum androsemifolium*——Liquorice——Ginseng——Many other Swallow-worts, &c.

Remarks—It may be useful to notice some other species possessing the same properties.

A. syriaca or common Silkweed, grows all over the United States near streams; it has large oblong opposite leaves, white beneath, and large globular umbels of sweet scented flowers of a lilac color.

A. incarnata, grows also near streams every where, has lanceolate leaves, opposite and acute; flowers flesh colored or red, scentless.

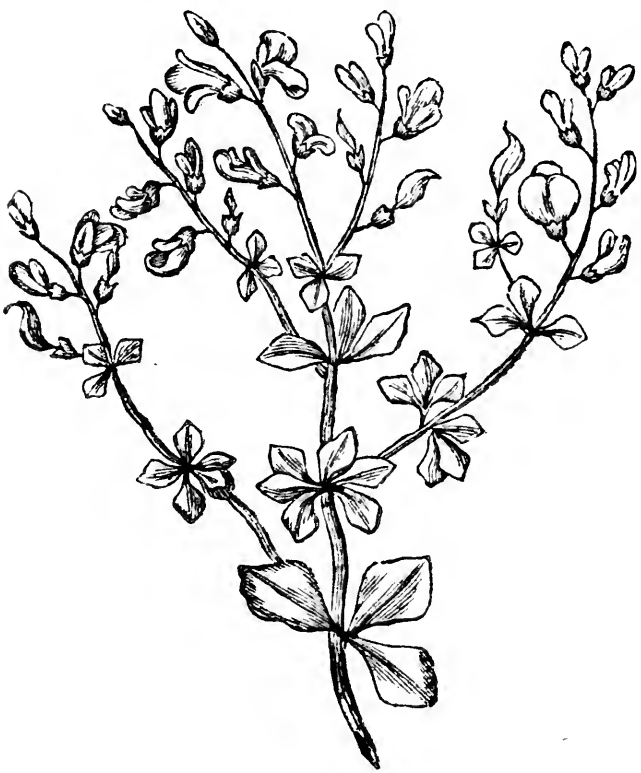
A. acuminata, also near streams in New-Jersey, &c. with opposite ovate acuminate leaves, flowers red and white.

A. quadrifolia, from New-York to Kentucky in woods, beautiful little plant with leaves like the foregoing, but four in a whorl, flowers flesh coloured and very fragrant.

Henry calls our plant *A. decumbens*, but his figure is a very bad one of *A. incarnata*.

No. 14.

BAPTISIA TINCTORIA.



YELLOW INDIGO-BROOM.

No. 14.

BAPTISIA TINCTORIA.

English Name--INDIGO-BROOM.

French Name—Indigo trefle.

German Name—Farbende Baptisia.

Officinal Names—Baptisia tinctoria, herba & radix.

Vulgar Names—Wild Indigo, Indigo weed, Horsefly weed, Yellow broom, Clover broom, Rattle-bush, Yellow Indigo.

Synonyms—*Sophora tinctoria*, Lin. *Podalyria tinctoria*, Mich. &c.

Authorities—Linnæus, Michaux, Pursh, Elliot, Weems, Thacher Dispensary, Comstock, Schoepf, Bart. M. Med. fig. 29.

Genus Baptisia—Calix bilabiate, four cleft. Corolla papilionaceous, petals nearly equal, vexillum laterally reflexed. Stamina ten, free unequal. Pistil stipitate, ventricose, many seeded—Leaves ternate.

Species B. tinctoria—Very smooth and branched, leaves small nearly sessile, folioles cuneate, obovate, obtuse ; racemes terminal, few flowered ; pods ovate on long pedicles.

DESCRIPTION—Root perennial, large and woody, irregular, blackish outside, yellowish within, fibres lighter. Stems two or three feet high, round and smooth, yellowish green with black dots, very much

ramified; but branches thin and with small leaves. These leaves are alternate, and with three folioles nearly sessile, obovate, smooth, of a bluish green; stipules minute, evanescent, oblong, acute.—Flowers bright yellow, in small loose spikes at the end of branches, pea like, but smaller.—Calix campanulate bilabiate, upper lip entire or notched, lower trifid.—Stamina inclosed deciduous.—Pistil single and stipitate, succeeded by a swelled oblong pod of a bluish black color, with a row of small rattling seeds.

HISTORY—This plant has the appearance of a small shrub and broom: it blossoms in July and August. The whole plant (even the flowers) often become black in the fall or in a herbarium; it dyes a kind of blue like Indigo; but greatly inferior. The young shoots are eaten like those of Poke in New-England, and are like it of a drastic nature. It is often used to keep off the flies from horses, as these insects appear to avoid it.

Several other species grow in the Southern and Western States, which have probably similar qualities. The *B. australis* with large blue flowers, very ornamental, grows on the banks of streams: the *B. alba* has white flowers, &c. These plants were annexed to *Sophora* by Linnæus, and to *Podalyria* by other botanists, until properly separated by Ventenat, &c.

Baptisia belongs to the great natural order of LEGUMINOSE plants, (bearing pods,) and to the section *Lomentaceous*, having free stamina: also to DECANDRIA *monogynia* of Linnæus.

Locality—Found all over the United States from Maine to Louisiana and Illinois, in woods, and on hills; it prefers dry and poor soils, is unknown in rich loamy soils, and seldom met in alluvions.

Qualities—The whole plant, but particularly the root, is nauseous, subacrid, subastringent, but inodorous. It is active and dangerous in its fresh state, if taken internally; but loses much of its action by long keeping, and by boiling. Its active principles are little known; it contains tannin, indigo, and an acid.

PROPERTIES—Astringent, antiseptic, febrifuge, diaphoretic, purgative, emetic and stimulant. It is a valuable remedy for all kinds of ulcers, even the foulest, either gangrenose, phagedenic, or syphilitic: also for almost every sore, such as malignant ulcerous sore throat, mercurial sore mouth, sore nipples, aphthous, chronic sore eyes, painful acrid sores, and every ulcerous affection. It must be used externally in strong decoction as a wash or in fomentation, also in poultice, or ointment with lard or cream.

This is one of the most powerful vegetable antiseptics in putrid disorder and in internal mortification, it may be given internally at the dose of half an ounce of a decoction, made with twenty times its weight of water. It stops gangrene, has cured Scarlatina anginosa, inverted uterus, and sometimes putrid and typhus fevers. As a cathartic and emetic, it is inconvenient and variable in results.

Substitutes—*Kalmia latifolia*—Charcoal—Tonic Barks—*Rubus villosus*—*Collinsonia Canadensis*—*Solanum dulcamara* & *S. virginicum*, &c.

No. 15.

BERBERIS CANADENSIS.

English Name—BARBERRY.
French Name—Epine Vinette.
German Name—Berberitze.
Officinal Name—Berberis baccae, &c.
Vulgar Name—American Barberry bush.
Synonyms—*Berberis Vulgaris* Var. *Canadensis* of Linnæus, Michaux, &c.
Authorities—Linnæus, Michaux, Pursh, Schoepf, several Dispensaries, and Mat. Med.

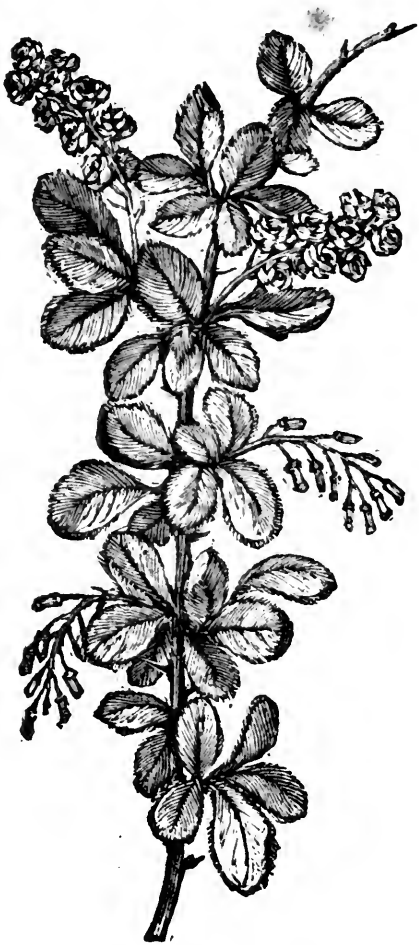
Genus Berberis—Calix free with six sepals or folioles, and three small bracts outside. Corolla with six petals, biglandular at the base. Stamina six, opposite to the petals. One free pistil, germ oblong, stigma sessile and umbilicate. Berry one celled, two-four seeded.

Species B. Canadensis—Shrubby, upright, branches dotted, with triple thorns; leaves fasciculate obovate, remote serrulate: racemes nodding or drooping.

DESCRIPTION—A pretty shrub rising from four to eight feet high, with long bending branches, having many confluent dots and some small thorns, often three together. The leaves are crowded and unequal in each fascicle; on short petiols; they are smooth and glossy, oboval, obtuse, with small remote teeth. The flowers are on slender and lax racemes, either

No. 15.

BERBERIS CANADENSIS.



BARBERRY BUSH.

nodding or pendulous; they are yellow, on long pedicels, and rather small. The petals are oblong obtuse, and have each two glands and a stamen at the base. The berries hang in loose bunches, they are oblong and red, smaller and less juicy than in the common garden Barberry of Europe.

HISTORY—*Berberis* is an ancient name, it is the type of the natural order of BERBERIDES. In the Linnean system it is placed in HEXANDRIA *monogynia*. This species was considered a variety of the *B. vulgaris* of Europe, till Pursh separated it, and it hardly differs from it. It blossoms in April and May, and ripens the berries in June; but they are sometimes abortive.

The stamina of the flowers are irritable, and bend with elasticity towards the pistil. It is supposed that the vicinity of this shrub is injurious to wheat, and this has been noticed as one of the instances of vegetable antipathy or incompatible vicinity. It is liable to the rust, sterility, and many other diseases.

LOCALITY—From Canada to Virginia, in mountains, hills, among rocks, &c. Common in New-England in rocky fields: rare in the West and in rich soils.

QUALITIES—The whole shrub (even the root) is acid; in the berries this acid becomes very pleasant, and is probably the tartaric; but mixed with some astringency; the bark is yellow and bitter.

PROPERTIES—Antiseptic, acid, subastringent, refrigerant, &c. The berries, leaves, bark and roots, may be used in putrid fevers, dysentery, bilious di-

arrhea, summer flux, and all kinds of acute inflammations. A syrup, jelly, conserve, &c are made with them, which prove very palatable, cooling, and beneficial in those complaints, as auxiliary remedies It has also been used in the jaundice and other diseases; but with less success and certainty. The bark has very different properties: it is tonic and purgative; it has been given in Leucorhœa, aphthes, jaundice, &c. it also dyes of a yellow color.

Substitutes—Red Currants—Pomegranate—Lemon Juice—Cream of Tartar—*Andromeda Arborea*—*Callicarpa Americana*—*Oxalis*—Common berry—Tamarinds, and all strong vegetable a' also Elixir of Vitriol, &c.

No. 16.

BOTROPHIS SERPENTARIA.

BLACK SNAKE-ROOT.

No. 16.

BOTROPHIS SERPENTARIA.

English Name—BLACK SNAKE-ROOT.

French Name—Serpentaire noire.

German Name—Schwarz Schlangewurz.

Officinal Name—Serpentaria nigra.

Vulgar Names—Squaw root, Rich weed, Rattle weed, Rattle-Snake-root, Black Cohosh &c.

Synonyms—*Actea racemosa*, Lin. &c. *Cimicifuga Serpentaria*, Pursh, &c. *Macrotrys*, Sub-G. Rafinesque and Decandolle.

Authorities—Linnæus, Schoepf, Colden, Michaux, Pursh, B. Barton, Elliot, Decandolle, some Dispensaries, Tully, Big. Sequel, &c.

G. Botrophis.	G Actea.	G. Cimicifrega.
1. Cal. four leaved	Calix four leaved.	Calix four leaved.
2. Corolla, with *many minute flat petals.*	Corolla, with four large flat petals.	Corolla with four urceolate petals.
3. Stamina many.	Stamina many.	Stamina many.
4. Pistil *one.*	Pistil one.	Pistils several.
5. *Capsul* dehiscent longitudinally.	Berry not opening.	Several dehiscent capsuls.
6. Seeds many lateral.	Seeds lateral.	Seeds scaly.

Species B. Serpentaria—Leaves ample, decomposed or tripinnate, folioles ovate acute, serrate or

jagged; raceme terminal, very long, more or less bent: flowers scattered, peduncled, bracteolate.

DESCRIPTION—Root perennial, blackish, thick, with long fibres.—Stem simple straight, from three to six feet high, smooth, angular, furrowed, often crooked—leaves few and alternate, one nearly radical, remote, ample, decomposed, tripinnate, upper one bipinnate; folioles sessile, opposite, three to seven on each last division of the petiole, oval or lanceolate, acuminate, smooth, pale beneath, with yellowish reticulated veins, margin unequally jagged, or sharply serrate, particularly outside: the last foliole is trifid.

Flowers in a long terminal raceme, from one to three feet long, often with one or two shorter ones near its base. This raceme is cylindrical, white, always bent or crooked at first; the flowers are scattered, lax, often geminate or fasciculate, on short peduncles, with a subulate bract. The calix is white, like a corolla, with four thick rounded and obtuse sepals; the petals are very small, shorter than the calix and stamina: these last form a pencil, the filaments are white, club shaped; the anthers yellow, oblong, terminal. Pistil oval, without style, stigma sessile, lateral and flattened. Capsul blackish and dry, with one cell and a longitudinal receptacle, opposite to the opening, to which many flat seeds are attached.

This plant has many varieties, one is dwarf, a foot high, with a triangular stem, leaves small, biternate, and with several racemes: growing in the mountains of New York. If it is a peculiar species; it might be called *B. pumila*.

HISTORY—Notwithstanding my reluctance to innovate in this work, I am compelled to separate this plant from the Genera *Actea* and *Cimicifuga*, to which it has been by turns united. I did so ever since 1808, calling it *Macrotrys*, which meant *long raceme*, which name Decandolle has adopted as a subgenus of *Actea*; but this name being delusive, too harsh, and an abbreviation of *Macrobotrys*, I have framed a better one, meaning *Snake raceme*: the raceme or long spike of flowers being mostly crooked, and like a snake. To convince any one of the necessity of this change and impossibility of leaving this plant with *Actea* or *Cimicifuga*, I have given the characters of the three genera in opposition to each other, whereby the striking difference in the corolla, pistils and fruit, will be perceived at once.

Actea and *Botrophis* belong to a peculiar natural family, the ACTEIDES, having single pistils and fruits: while *Cimicifuga* belongs to RANUNCULIDES with several pistils. *Botrophis* must be put with *Actea* in POLYANDRIA *monogynia*, while *Cimicifuga* belongs to POLYANDRIA *pentagynia* or *polygynia*.

The *Actea japonica* is probably a *Botrophis*. The American species has an extensive range, and was used by all the Indians. It blossoms in June and July. The whole plant, and even the flowers are medical.

LOCALITY—All over the United States, from Maine to Florida, Louisiana and Missouri, also in Canada and Texas; very common in open woods, rich grounds and sides of hills; less common in rocky

mountains and sunny glades, very rare in moist and wampy soils.

QUALITIES—The root and plant have rather an unpleasant smell, and a disagreeable nauseous taste. Schoepf considers it as nearly poisonous, and to be used with caution, yet powerful and heroic. It has not been analyzed, but appears to contain extractive and a fetid oil.

PROPERTIES—Astringent, diuretic, sudorific, anodyne, repellent, emenagogue, subtonic, &c. It is an article of the materia medica of the Indians, much used by them in rheumatism, and also in facilitating parturition, whence its name of Squaw-root. It has been found useful in sore-throat, as a gargle: also in dropsy, hysterics and psora, in decoction alone, or united with *Sanguinaria Canadensis.* It is a beneficial auxiliary in the treatment of acute and chronic rheumatism. It is used by the Indian doctors for agues and fevers, which it cures like *Eupatorium perfoliatum*, by a profuse perspiration. Yellow fever is said to have been cured by it, after an emetic had been taken.

This is one of the numerous Indian cures for the bites of snakes: they use the root chewed and applied to the wound; but they consider the *Eryngium aquaticum & E. yuccefolium* (corn Snake-root, or Rattle-snake flag) as by far more powerful and efficient. A decoction of the root cures the itch! It is useful for the diseases of horses and cattle, is said to purge them, expel their worms and cure the murrain, given as a drench.

Substitutes—*Actea alba* & *A. rubra*—*Eryngium aquaticum* & *E. yuccefolium*—*Eupatorium perfoliatum*—Snakeroots—Spikenards or Aralias—Cohosh or *Caulophyllum*—Juniper and other similar sudorifics and diuretics.

Remarks—Not figured in Bigelow nor Barton's works. Henry's figure of the Squawroot, which he wrongly calls *Asclepias purpurascens*, is a bad representation of this plant; but his description and text apply to some other plant.

The *Actea alba* or Whiteberry Snakeroot, which has the same properties, will be known by a shorter stem, smaller leaves, short, oblong raceme, with round white berries like wax. It grows from New York to Tennessee, in rich woods.

The *A. rubra* or Redberry Snakeroot, hardly differs from *A. alba*, but has red berries and is less common.

These two plants are also called Baneberries, and their berries are poisonous. They are called White and Red Cohosh by the Indians: the blue Cohosh is the Caulophyllum, and the black Cohosh the Botrophis.

No. 17.

BRASENIA HYDROPELTIS.

English Name—WATER-SHIELD.

French Name—Hydropelte.

German Name—Wasserschild.

Officinal Name—Gelatina aquatica, Brasenia.

Vulgar Names—Frogleaf, Little Water Lily, Water Jelly, Deerfood.

Synonyms—*Hydropeltis purpurea*, Michaux, &c.

Authorities—Schreber, Wildenow, Persoon, Michaux, Pursh, Elliot, Nuttal, &c.

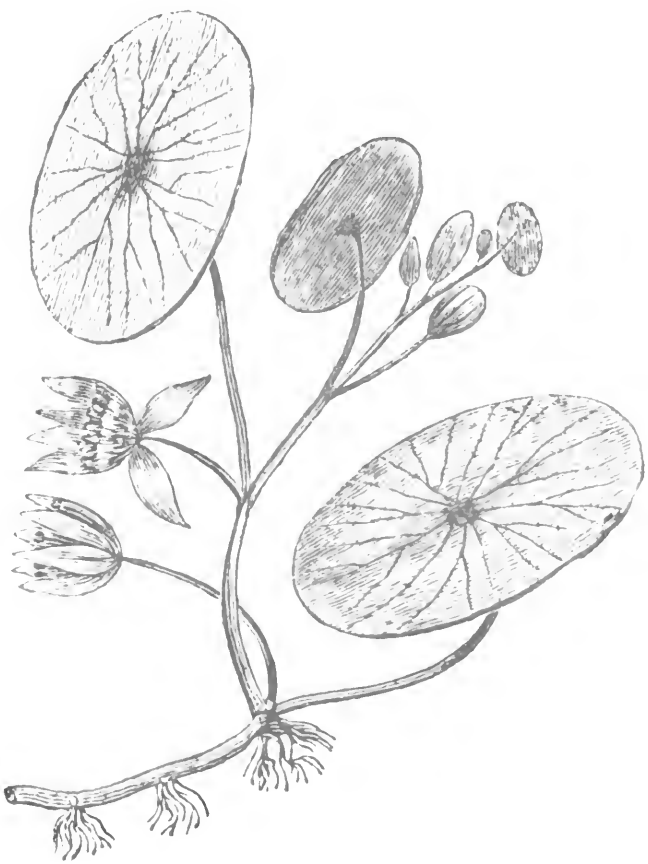
Genus Brasenia—Perigone simple, colored, coroliform, with six equal sepals or petals, stamina many, shorter, hypogynous, anthers adnate: many pistils, germs sessile with a style. Fruit, many small one-seeded achenes.

Species B. Hydropeltis—Roots creeping, leaves floating, alternate, peltate, elliptic, entire, gelatinous beneath: flowers axillary, solitary, peduncled.

DESCRIPTION—The roots are perennial, creeping under water and mud, cylindric, jointed with bundles of fibres at the joints—Stems many, growing till the leaves reach the surface of the water, almost similar to the roots—Leaves alternate, on very long slender petioles, floating on the water, of a regular elliptic form, like an oblong shield, entire and obtuse, smooth and lucid above, with regular radiating veins,

No. 17.

BRASENIA HYDROPELTIS.



WATER SHIELD.

white and veinless beneath, but covered with a coat of pale jelly, sometimes purplish : the leaves are two or three inches long.

Flowers on long axillary and solitary peduncles, similar to the petioles: these flowers are of a dark purple color, the six petals are oblong and acute : Stamina from twenty to thirty, shorter than the petals, surrounding the pistils which are from twelve to twenty, germs oblong, styles short, stigma obtuse. Achenes or small nuts naked, maturing under water, oval oblong.

HISTORY—This plant was unknown to Linnæus; it was first described by Schreber, and called *Brasenia*, from a German botanist, Brasen : Michaux changed improperly that name into *Hydropeltis*, meaning water-shield in Greek ; both names may be retained, but *Brasenia* has a prior claim to be the generic. Only one species is known.

It belongs to the natural order of RANUNCULIDES, and to POLYANDRIA *polygynia* of Linnæus. It blossoms in July and August. The flowers are pretty, but have no smell : the leaves are very singular, and afford one of the few instances of pure homogenous vegetable jelly, being spontaneously produced, and covering the whole under surface of the leaves, the stems and petioles are also more or less covered with it. Deer and cattle are very fond of eating these leaves : they resort to the places where they grow plentifully, and even swim in the water in search of them.

LOCALITY—From Carolina to Kentucky, and Flo-

rida, rare in Virginia, Missouri and Kentucky, found only in some local places, but there extremely abundant, and spreading so as to cover the whole surface of ponds, lakes, marshes and sluggish streams.

QUALITIES—The plant has no smell, but the taste is subastringent and bitterish; the jelly is a pure mucilage similar to that of Lichen and *Sesamum*, and spontaneously evolved; becoming gummose in drying.

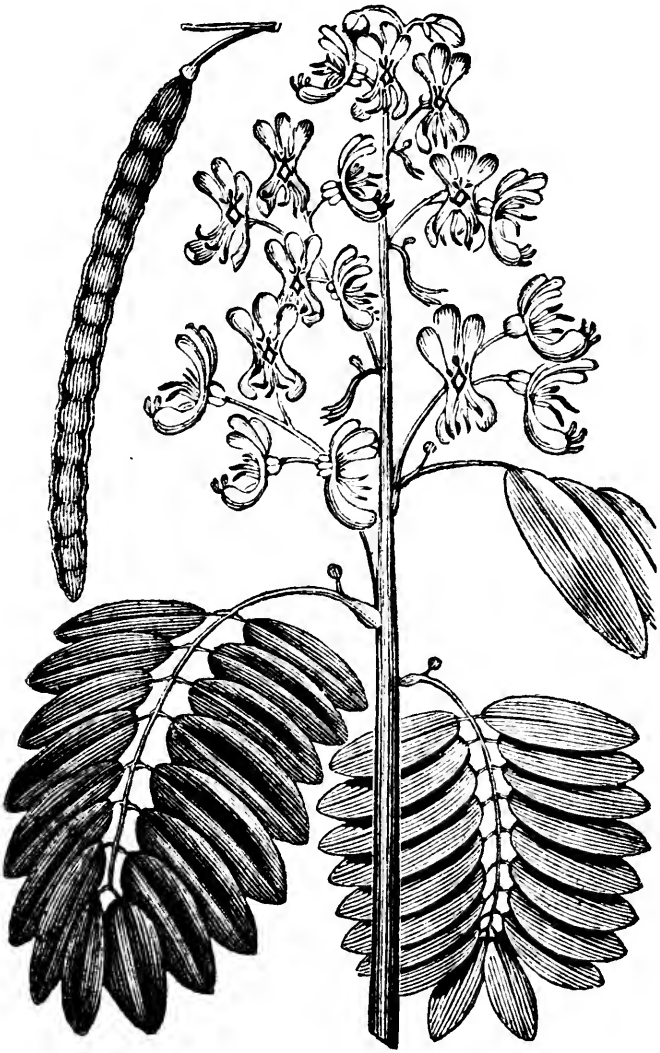
PROPERTIES—Mucilaginous, astringent, demulcent, tonic, nutritive, &c. Intermediate between *Lichen Islandicus* and the Water Lilies. The fresh leaves may be used like Lichen, in pulmonary complaints and dysentery: when dry the gelatinous matter almost disappears, yet they impart mucilage to water. If no virose quality exists in this plant, as the taste of deer for it appears to indicate, it may become a useful substitute or auxiliary to Lichen in phthisis, inflammations, debility, &c. boiled into decoction or jelly.

SUBSTITUTES—Lungwort or *Pulmonaisa*—Lichens—Arrow-root—Salep—*Nymphea* & *Nelumbium*—*Polypodium*—*Adianthum*—*Tussilago*—Elecampane—Liquorice—Marshmallow—*Sesamum*—Flaxseed.

REMARKS—Unnoticed as yet by all medical writers, but well known to the Indians.

No. 18.

CASSIA MARILANDICA.



AMERICAN SENNA.

No. 18.

CASSIA MARILANDICA.

English Name—AMERICAN SENNA.
French Name—Senne' d'amerique.
German Name—Marilandische Cassia.
Officinal Names—Senna Americana, folia, &c.
Vulgar Names—Wild Senna, Locust plant.
Authorities—Linnæus, Michaux, Pursh, Schoepf, Coxe, Thacher, Chapman, B. Barton, W. Bart. fig. 12, Big. fig. 39, & Seq. &c.

Genus Cassia—Calix five parted, colored, deciduous and unequal. Corolla with five unequal petals. Stamina ten, unequal and free, the three upper sterile, the three lower longer, anthers linear curved. Pistil stipitate. Pod bivalve, curved, many celled transversally—Leaves even pinnate.

Species C. Marilandica—Herbaceous, leaves with eight or ten pairs of oblong mucronate folioles, petiole uniglandular : racemes axillar and terminal, panicled : pods linear, flat and pendulous.

DESCRIPTION—Root perennial, contorted, irregular, woody, black, fibrose—Stems many, nearly smooth, upright, from three to six feet high, cylindrical and simple—Leaves alternate, not many, large, horizontal ; petioles compressed, channelled above, with an ovate stipitate gland at the base, bearing from eight to ten pairs of folioles or leaflets, which are

smooth, green above, pale beneath, with short uni-glandular petioles, shape ovate, oblong or lanceolate entire, equal, mucronate at the end—stipules subulate, ciliate, deciduous.

Flowers of a bright or golden yellow, forming a panicle, although partly axillary and in short racemes, having each from five to fifteen flowers; peduncles furrowed, pedicels long, glandular, with short bracts. Calix colored, with five oval obtuse and unequal segments. Petals five, spatulate, concave, obtuse, unequal, two lower larger. Stamina with yellow filaments and brown anthers, the three upper filaments have abortive anthers, the three lower filaments are longest, crooked, with long rostrated anthers, all the anthers open by a terminal pore. Germ deflexed with the lower stamina and hairy, style ascending, stigma hairy. The fruits or pods are pendulous, linear, hardly curved, flat and membranaceous, a little hairy, blackish, from two to four inches long, holding from twelve to twenty seeds, or small brown beans.

HISTORY—The genus *Cassia*, although very striking by the structure of its flowers, varies much in its pods, and must be divided into many genera; Tournefort and Gaertnesr had separated the *Cassia fistula* &c. with cylindrical, pulpy, evalve pods, calling the others *Senna*; but Persoon, &c. called the *Cassia fistula* by the new name of *Cathartocarpus*, leaving the name of *Cassia* to the Sennas. This was superfluous, and if I was not unwilling to increase this confusion, I would call this species *Senna riparia*, the name of *Marilandica* being also improper; it was

given to it because sent first from Maryland to Europe.

Cassia is an oriental name, derived from *Ketsich*, name of the *Cassia lignea* and *fistula*. The genus belongs to the natural order of LEGUMINOSE, section *Lomentaceous*. In the Linnean system it is placed in DECANDRIA *monogynia*, although it has only seven fertile stamina.

This plant blossoms from June to August; the best time to collect it, is in September, when the pods are ripe; since they are with the leaves, the efficient parts of the plant. It has been ascertained that this plant is more efficacious than the Senna of Egypt; it ought therefore, to supersede it altogether with us, and even to be exported to Europe: but the East India senna is said by Bigelow to be a little stronger.—The Senna of the shops is obtained from different plants, *Cassia lanceolata*, *C. Senna*, *C. italica*, &c. and even from *Cynanchum olefolium*.

LOCALITY—Found from Massachusetts to Missouri and Georgia, in rich moist and alluvial soils, near streams principally. Very common in the western States.

QUALITIES—The taste of the leaves is slightly nauseous: they have no smell; they contain resin extractive and a volatile oil. The infusion and decoction have the taste of the plant; the distilled water is nauseous; the tincture is dark brown and rendered turbid by water.

PROPERTIES—All the Sennas are simple cathartics, some kinds occasion gripings and yet are not

so active as rhubarb or jalap. This kind operates with mildness and certainty, at the dose of an ounce in decoction: both the leaves and pods are employed; the infusion is weaker, the tincture is less available, although stronger. They may enter into compound laxatives and cathartics, &c.

Substitutes—Senna—Cassia fistula—Rhubarb—*Juglans Cinerea*—*Podophyllum peltatum*—Castor oil, and all mild purgatives, besides the following species of *Cassia*; which are, however, still left active.

Remarks—Clayton and Schoepf, mentions the *C. ligustrina* as equal to Senna: it grows from Virginia to Georgia, has seven pairs of lanceolate, unequal folioles, and oblong curved pods.

C. chamecrista, small plant found every where in dry soils; it has many pairs of linear folioles, and large geminate flowers with two purple spots.

C. nictitans, or sensitive Senna, similar to the foregoing, but with very small flowers: common.

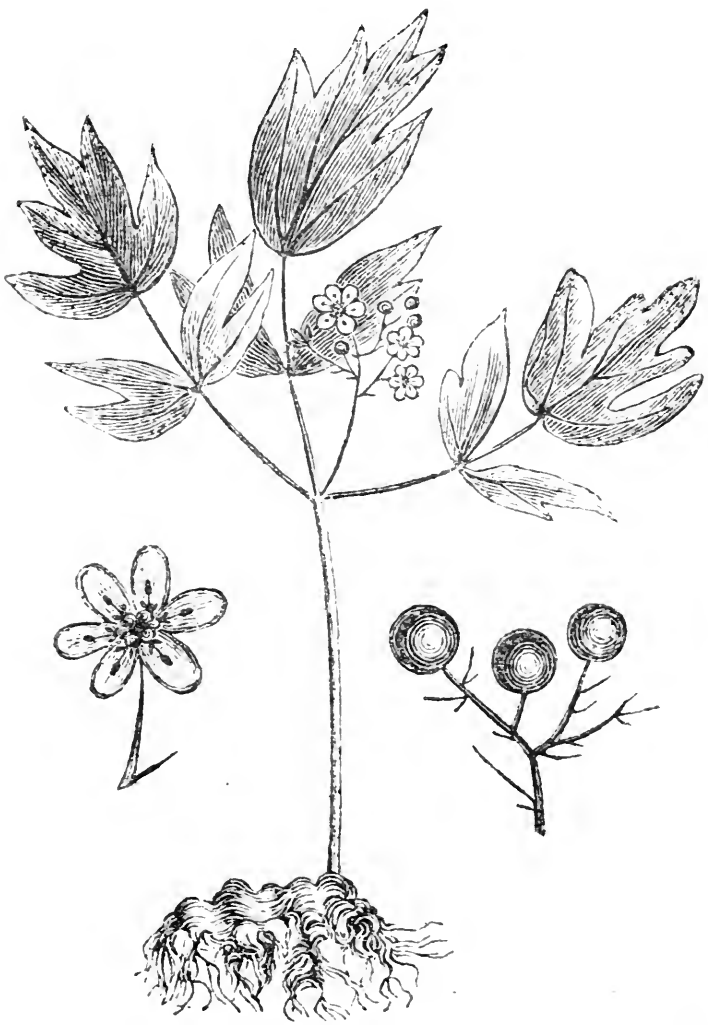
C. toroides, N. Sp. or sickle Senna, is perhaps the *C. tora* of some botanists; found from Georgia to Kentucky, it has three pairs of ovate folioles and long fulcated axillary pods.

All the American Sennas have yellow flowers.—Schoepf, says that the *C. biflora* is antisyphilitic.

Henry's figure of the American Senna is fictitious, having four pairs of folioles and regular terminal flowers.

No. 19.

CAULOPHYLLUM THALICTROIDES.



BLUEBERRY COHOSH.

No. 19.

CAULOPHYLLUM THALICTROIDES.

English Name—BLUEBERRY COHOSH.
French Name—Cohoche Bleu.
German Name—Blau Cohosch.
Officinal Name—Caulophyllum radix.
Vulgar Names—Cohosh, Cohush, Blueberry, Papoose root, Squaw root, Blue Ginseng, Yellow Ginseng.
Synonyms—*Leontice thalictroides* Linnæus, &c.
Authorities—Michaux, Pursh, Elliot and some dispensaries. Not in Barton nor Bigelow.

Genus Caulophyllum—Calix colored with six equal sepals. Corolla with 6 small petals, opposite to the sepals of the calix and much shorter. Stamina six opposite to the petals, anthers opening laterally. One central free pistil, one Style and Stigma Fruit a globular one seeded drupe.—Leaves three on a trifurcate stem.

Species C. thalictroides—Very smooth, three leaves with three dissected or lobed folioles, the terminal cordate: in the centre a dichotome corymb, shorter than the leaves.

DESCRIPTION—Whole plant from two to four feet high.—Root perennial, yellow inside, brown outside, hard, irregular, knobby, branched, with many

fibres—Stem upright, straight, smooth, trifurcate at the top or dividing into three leaves, in the centre of which comes out the panicle of flowers—Leaves petiolate smooth, pinnate lobed, with three, very seldom five folioles, the lateral ones nearly sessile, oval or oblong, inequally bifid and acute: the terminal foliole separated, larger, subcordate, with five, seldom three, unequal lobes or segments, oval and acute.

Flowers in a short central loose corymb, yellowish green, rather small; rachis slender, dichotome, with minute bracts at each division. Each flower pedunculed, with six equal elliptic obtuse sepals—Petals six very small, opposite and notched, with each an opposite longer stamen, filaments short, anthers elliptic bilocular, opening on each side—Germ globular, style short, stigma obtuse—Drupes resembling berries succeed the blossoms; they are smooth of a dark blue, globular, rather large, with only one hard seed.

HISTORY—This genus which includes only one species, was united to *Leontice* by Linnæus; but separated by Michaux; they both belong to the natural family of Berberides, and to Hexandria *monogynia*. *Caulophyllum* implies that the stem and leaves are connected as it were, and the specific name alludes to the leaves being similar to many Thalictrums—Cohosh was the indigenous name of this plant, and a better one than Blueberry, the usual one in many parts: it blossoms in May and June, while the leaves are yet tender and small, the berries are ripe in summer; they are dry, sweetish, insipid, similar to huckle berries, but larger.

This is a medical plant of the Indians, and although not yet introduced into our officinal books, deserves to be better known. I have found it often used in the country and by Indian Doctors; Smith and Henry extol it.

Locality—All over the United States, from Canada and New England to Missouri and Georgia; but chiefly on mountains and shady hills, rare in plains and glades, yet often found in deep fertile soils, swampy and moist grounds; in river islands, &c.

Qualities—The root is the only part used: in smell and taste, it partakes of Ginseng and Seneca root, and is sometimes mistaken for both. It is sweetish, a little pungent and aromatic: the infusion and tincture are yellow—it contains a gum, resin and oil.

Properties—Demulcent, antispasmodic, emenagogue, sudorific, &c. It is used by the Indians and their imitators for rheumatism, dropsy, cholic, sore throat, cramp, hiccup, epilepsy, hysterics, inflammation of uterus, &c. It appears to be particularly suitable for female diseases, and Smith asserts that the Indian women owe the facility of their parturition, to a constant use of a tea of the root for two or three weeks before their time. As a powerful emenagogue it promotes delivery, menstruation, and dropsical discharges. It may be used in warm infusion, decoction, tincture, syrup or cordial.

Substitutes—*Sanguinaria canadensis*—Pennyroyal—*Polygala Senega*—Snake roots—Red Cedar—Spikenard—Camphor—Ginseng, &c.

Remarks—The figure of Henry has trifoliate leaves and the berries on the leaves!

No. 20.

CEPHALANTHUS OCCIDENTALIS.

English Name—BUTTON-WOOD SHRUB.
French Name—Cephalanthe d'amerique.
German Name—Americanische Weissball.
Officinal Names—Cephalanthus Cortex, &c.
Vulgar Names—White Ball, Little Snowball, Swampwood, Pond Dogwood, Globe flower, in Louisiana *Bois de Marais.*
Authorities—Lin. Mich. Pursh, Elliot, Robin, W. Bart. Fl. fig. 91.

Genus Cephalanthus—Flowers crowded on a globular and hairy phoranthe. Calix symphogyne quadrangular, margin small fourtoothed. Corolla tubular-funnelform, four cleft, epigyne, bearing four stamina equal and protruding. Pistil one coherent with the calix, style long, stigma globose. Capsule two celled, two seeded, nearly bipartible, and each cell nearly bivalve, valves uniserial.

Species C. occidentalis—Leaves ternate or opposite, petiolate, oval-accuminate, entire and smooth: heads of flowers terminal, peduncled, upright.

DESCRIPTION—A fine ornamental shrub from five to fifteen feet high, very branched; bark yellow brown spotted with red, rough on the stems. Leaves ternate or opposite, with red petiols from two to four

No. 20.

CEPHALANTHUS OCCIDENTALIS.

BUTTONWOOD SHRUB.

inches long, oval, base acute, end acuminate, margin often undulate, smooth on both sides, but glaucous beneath, nerves often red, veins yellow.

Flowers terminal peduncled, forming round balls of a cream white color, and sweet scented, fringed all over by the protruding Stamina and styles, nearly as large as a walnut Phoranthe or common receptacle globular and hairy, flowers crowded all over it. Calix coherent with the pistil, with four small acute teeth—Corolla inserted on the Pistil, tubular or nearly funnel form, with four ovate segments. Stamina and style filiform, double the length of the Corolla, anthers and stigma yellow—Capsuls small, crowded, formed by two semibivalve cells, the valves opposite to each other, the two outside valves angular, each cell has only one seed.

Locality—All over the United States from Canada to Louisiana, Missouri and Florida; mostly found near streams, ponds, swamps, lakes, &c.

HISTORY—*Cephalanthus* means head-flower in Greek, alluding to the globular form of the blossoms. Linneus only knew this species, and gave to it the name of occidental. It is peculiar to North America; the same kind said to be found in Cochinchina is a different species; but there are several varieties in the United States, not yet well noticed, some of which may be perhaps peculiar species; such are

Var. *pubescens*, with pubescent leaves, in Georgia.

Var. *macrophylla*, with large leaves half a foot long, corolla hairy inside: in Louisiana, &c.

Var. *obtusifolia*, leaves oval-oblong, obtuse, not undulate: in New York.

They all blossom in summer, July and August: the flowers have a peculiar fragrant smell, similar to Jessamine. The wood is brittle and useless.

The Genus belongs to the great natural order of RUBIACEOUS, forming with *Nauclea*, &c. a peculiar section or family, with capitate flowers. It ranks in TETRANDRIA *Monogynia*.

QUALITIES—The whole shrub active, and bitterish, the bitterness is most enfolded in the bark of the roots: this bark and the inner bark of the stem are brittle, somewhat resembling Cascarilla and Dogwood, in appearance and qualities. It has not been analyzed; but contains an essential oil, besides the usual principles of tonic barks: the oil is most abundant in the flowers.

PROPERTIES—Tonic, febrifuge, cathartic, diaphoretic, &c. The flowers, leaves, bark of stems and roots, are used by the Southern Indians, and the French settlers of Louisiana. It has not yet been noticed in our materia medica, and is even omitted by Schoepf and Henry; but it deserves further attention. A fine fragrant syrup may be made with the flowers and leaves, which is a mild tonic and laxative. The most efficient part is the bark of the root. A decoction of it, cures intermittent fevers, acting on the bowels at the same time, is useful in relaxed bowels, &c.

SUBSTITUTES—*Cornus* or Dogwood—*Magnolias*—*Pinckneya*—*Liriodendron*—*Cascarilla*, &c.

REMARKS—The *Platonus occidentalis* or Sycamore, also called Button-wood is a large tree.

No. 21.

CHENOPODIUM ANTHELMINTHICUM.

WORMSEED GOOSEFOOT.

No. 21.

CHENOPODIUM ANTHELMINTICUM.

English Name—WORMSEED GOOSEFOOT.

French Name—Anserine Vermifuge.

German Name—Wurmsamen Gansefuss.

Officinal Name—Chenopodium seu Botrys Anthelminticum.

Vulgar Names—Jerusalem Oak, Wormwood, Worm seed, Stinking weed.

Authorities—Linnæus, Michaux, Pursh, Schoepf, B. Barton, Mease, Wilkins, Coxe, Thacher, Chapman, Stoker, Big. seq. W. Bart. Mat. Med. fig. 44.

Genus Chenopodium—Perigone simple persistent, caliform, five parted, Stamina five perigyne. Pistil free with a bifid style. Seed single, lenticular, covered by the perigone.

Species Ch. anthelminticum.—Leaves oval-oblong, sessile, sinuate-toothed: flowers terminal, sessile, in glomerules, forming leafless panicled slender spikes.

DESCRIPTION—Root perennial and branched—Stem upright, grooved and branched, branches fastigiate, giving a shrubby appearance to the whole plant, which rises from two to five feet in height—Leaves sessile, alternate or scattered; attenuated at both ends, oval or oblong, rather thick, dotted beneath, margin sinuate by large unequal obtuse teeth, nerves very conspicuous.

Flowers very small, numerous and yellowish green

like the whole plant, forming large, loose leafless terminal panicles, composed of many slender alterning small spikes, and these of many small scattered unequal glomerules, containing from five to twelve sessile flowers. Calix or simple perigone with five short oval segments; stamina opposite to the segments, and protruding. Styles bifid or trifid, filiform, longer than the stamina. Seed flat, lenticular, shining, covered by the persistent calix.

HISTORY—The whole plant has a strong, pungent smell, somewhat like valerian which is disgusting to many persons; this smell is easily known and enables to distinguish it from some other consimilar species, which are often blended with it: such are the *Ch. ambrosioides & Ch. botrys*, whose smell is agreeable and fragrant, although strong.

The genus belongs to the natural order of ATRIPLICES, and to PENTANDRIA *digynia* of Linnæus. The generic name means Goosefoot in Greek, the specific refers to its value against worms.

It blossoms from July to September, at which time the plant may be collected and dried; but if the seeds are wanted, October is the best time, although they ripen in succession during all the autumn. The plant is now sometimes cultivated for medical uses, both in America and Europe. The dried plant retains the peculiar smell.

LOCALITY—From New England to Missouri and Georgia, more abundant and larger in the South: common in old fields, along fences, in alluvions, gravel, rubbish, and even in streets; but never in woods nor mountains.

QUALITIES—The strong and lasting smell of the whole plant, is owing to an essential oil, very penetrating or pungent, and in which resides the medical property. It is diffused throughout the plant, particularly in the globular dots of the leaves, and the seeds. The taste is bitter, acrid and aromatic.

PROPERTIES—A powerful vermifuge used both in America and Europe; found equal to the officinal wormseed, which is the *Artemisia Santolina*, a very different plant, native of Syria and Africa. It expels speedily, the Lumbrics and other worms of the intestines. It must be given in repeated small doses, and the most palatable form: the seeds and their essential oil are the most efficacious, eight or ten drops of the oil, mixed with sugar are a common dose for a child, or a table spoonful morning and night fasting, of an electuary mode of the pulverized seeds with honey. A conserve, marmelade, syrup, beer, decoction in milk, of the leaves, (or even their juice.) are also used. Children often dislike the strong smell of this medicine, and it must be disguised by orange peel or sweet substances. The seeds and oil are now kept in the pharmacies but the last is often adulterated with oil of Botrys or of Turpentine; which lessen its power; it may then be known by a less pungent smell.

This plant has only been employed against worms, as yet, but it possesses probably all the properties of the *Ch Botrys* and *ambrosioides*, which are pectoral, resolvent, carminative and emenagogue: useful in asthma, suppressed menstrations, &c.

SUBSTITUTES—*Spigelia* or Pinkroot—*Lobelia*

cardinalis—Wormwood—*Silene Virginica*—*Polanisia graveolens*, and all other vermifuges.

Remarks—Many other species of *Chenopodium* are medical; but none vermifuge like this: those which approximates in appearance and smell are the following; which must not be mistaken for this although useful in other respects.

Ch. botrys or sweet Jerusalem oak, has oblong obtuse sinuate leaves, and crowded panicles. Common all over the United States, in sand and gravel near streams.

Ch. ambrosioides or Fragrant Jerusalem oak, has narrow or lanceolate toothed leaves, and leafy panicles, with a very fragrant smell, stronger than in the foregoing. Grows promiscuously with *Ch. anthelminticum*.

The whimsical name of Jerusalum oak has been given to these plants, from a fanciful similitude to the leaves of the oak.

Henry's figure represents probably the *Ch. botrys*.

No. 22.

CICUTA MACULATA.

AMERICAN HEMLOCK.

No. 22.

CICUTA MACULATA.

English Name—AMERICAN HEMLOCK.
French Name—Cigue d'Amerique.
German Name—Americanische Schierling.
Officinal Names—Cicuta Americana.
Vulgar Names—Snakeweed, Death of man, Water Parsley, Poison root, Wild hemlock, Children's bane.
Authorities—Linnæus, Schoepf, Pursh, B. Barton, Ely, Stockbridge, Bigelow, fig. 12.

Genus Cicuta—Flowers umbellate: No involucres, involucels many leaved and short; calix symphogyne, crown five toothed: petals oboval, entire, inflexed; five long stamina; Fruit orbicular, crowned; with ten furrows, bipartible, bisperme.

Species C. maculata—Root fasciculate, tuberose: Stem hollow and striated; leaves tripinnate, folioles lanceolote, serrate, acuminate, teeth mucronate, veins exmedial: involucels acute, flowers lax.

DESCRIPTION—Root perennial, composed of many oblong fleshy tubers, of a finger's size—Stem from three to six feet high, hollow, striated, jointed, purple or green, smooth and branched.——Leaves smooth, decomposed, alternate with petioles clasping at the base, bilobe, membranaceous; decreasing in size upwards, where they are only ternate, while the lower are tripinnate or triternate, folioles sessile, op-

posite, lanceolate, serrate, acuminate, with veins ending at the notches, which is very unusual.

Flowers white in terminal umbels, without involucres, umbels with seven to twelve umbellules, each having from twelve to twenty flowers, upright, not crowded: Involucels very short, oblong, acute; calix connected with the pistil, crowned, crown with five minute segments. Petals five obovate, white, entire, end inflexed. Filaments longer filiform, anthers oval. Two short recurved styles. Fruit nearly globular, divisible into two seeds as in all the umbellate plants, each is flat inside, convex outside, with five furrows.

Locality—In wet meadows, pastures, and ditches; near streams and swamps, from New England to Georgia and Ohio: also in the mountains of Pennsylvania and Virginia.—Blossoming in summer, from July to August.

HISTORY—The genus *Cicuta* is one of the poisonous hemlocks; the *Conium maculatum*, is, however, considered as the true hemlock and the most virulent: but the deadly poison of that name (rendered famous by the death of Socrates) was a compound beverage. In the United States, the same name is capriciously given to a beautiful and useful species of Fir-tree.

Both *Cicuta* and *Conium* belong to the natural order of UMBELLATE, or Umbelliferous plants, and to PENTANDRIA *digynia* of Linnæus, although they have only one pistil.

Cicuta was the old latin name, *maculata* means spotted; but the plant not being spotted, it is a very

bad specific name; which Bigelow would have changed into *fasciculata*, if changes of old names should not be avoided.

Many umbellate plants growing near waters are poisonous, although the Sweet Sisily or *Myrrhis* is not. The root of the last is often sought for by children, who like its sweet taste; but are apt to mistake this and many other poisonous plants for it, by which mistake several have been poisoned. It would be well to avoid all similar plants; or at least to attend to their different smell and taste, which is strong and disagreeable in all the pernicious kinds.

These deleterious plants appear to lose some of their virulence when growing in a drier soil, or cultivated in gardens. Sheep and goats eat them with impunity, and even cattle do not appear injured by them when mixed with hay.

Several persons searching for Angelica root, Sweet flag, Sweet Sisily (which have all a pleasant aromatic smell and taste,) have eaten this root by mistake, and some have died in an hours time. The effects of the poison were violent convulsions, a frothing mouth, a bleeding nose, dilated pupils, fixed eyes, &c. When vomiting was produced naturally, they were saved, after being very sick for three days, with stupor, paleness, &c. Persons poisoned in this way, ought therefore to evacuate the stomach, by tickling the throat, or taking an emetic; sulphate of zinc is the most speedy. Vinegar or Lemon juice may also be given to neutralize the narcotic poison, and next Castor oil, mild purgatives, strong coffee, &c. after vomiting.

QUALITIES—The root has a strong penetrating smell and taste, its bark contains a yellowish juice in small cavities. The juice of the root is viscid, resinous, dissolves in alcohol, and is precipitated by water. It produces a thick volatile oil by distillation, and a resin of a dark orange color is left. The decoction of the root is whitish. The extract of the whole plant is dark and has a nauseous smell.

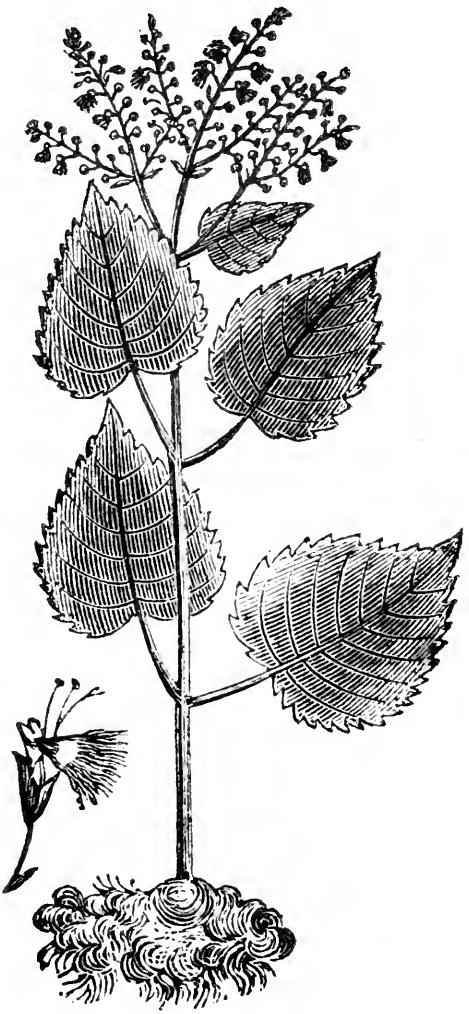
PROPERTIES—A strong narcotic, solvent, and good substitute for the *Conium maculatum*, being more powerful, and requiring a lesser dose. A few grains of the dried leaves or extract have been given in schirrose and scrofulous tumors and ulcers, with equal advantage; but a larger dose produces nausea and vomiting: the doses should be very small, often repeated and gradually increased. It has been used in gargle for the sore throat, but safer substances ought to be preferred.

SUBSTITUTES—*Conium maculatum*—*Angelica atropurpurea*, and other violent narcotics.

REMARKS—The Indians when tired of life, are said to poison themselves with the roots of this plant and the purple Angelica, *Ax. atropurpurea*.

No. 23.

COLLINSONIA CANADENSIS.



BROADLEAF STONEROOT.

No. 23.

COLLINSONIA CANADENSIS.

English Name--BROADLEAF COLLINSONIA
French Name—Collinsone du Canada.
German Name—Canadische Collinsonie.
Officinal Name—Collinsonia.
Vulgar Names—Richweed, Richleaf, Heal-all, Horseweed, Knot-root, Stone-root, Knot-weed, &c.
Authorities—Lin. Mich. Pursh, Schoepf, Mease, &c.

Genus Collinsonia—Calix campanulate, bilabiate, five toothed. Corolla tubulose, limbus unequal sub-bilabiate, campanulate, upper lip very short, notched, lower lip fringed. Stamina two or four, or rather four, two of which are often sterile, or without anthers. One pistil, one style, stigma lateral. Fruit four seeds, often only one or two by abortion—Leaves opposite, flowers terminal panicled, commonly yellowish.

Species C. canadensis—Smooth; leaves few, ample, petiolate, cordate, serrate, acuminate: panicle lax, teeth of the calix subulate, equal to the tube of the corolla, two fertile stamina.

DESCRIPTION—Root perennial, knotty, depressed, hard with many slender fibres—Stem simple, round, straight, about two feet high.—Only two or three pairs of large thin leaves, on long petioles, cor-

date at the base, broadly ovate, acuminate, with broad teeth, surface smooth, with small veins.

Inflorescence in a terminal leafless panicle, formed by branched racemes—Flowers opposite on long peduncles, with short subulate bracteoles. Calix campanulate, with five subulate teeth. forming two lips, the lower lip is longer and with two segments. Corolla yellowish, tubular at the base, spreading above in two lips; the upper lip is very short and notched, the lower lip is lobed on the sides, and fringed around. Two long protruding stamina, filaments filiform, anthers oval. Style protruding. Seeds often abortive, and only one ripening.

HISTORY—*Collinsonia* is a genus peculiar to North America, and dedicated to Collinson, an English botanist and philosopher. It was at first formed by this single species, but has since been increased by many others, which have all the same habit: whereby the genus is easily distinguished from the *Salvia* (Sage), *Monarda* and *Lycopus*, genera belonging to the same natural order of LABIATE, and section of *Diandrous*. But this genus offers the anomaly of having some tetrandrous species: wherefore it might be placed both in *Diandria*, *Tetrandria* or *Didynamia* of Linnæus!

The species with four stamina are *C. Anisata*, *C. longiflora* & *C. Verticillaris* fl. ludov. They must of course form a peculiar subgenus, which I have called *Hypogon*; and perhaps consistency requires to make a genus of it, in order to obviate the anomaly in classification. However, they all possess the same

qualities and properties, as well as the striking habit of large leaves and panicled fringed flowers often yellow.

The *C. canadensis* is a handsome estival plant, blossoming from July to September.

Locality—Found from Canada to Carolina, in woods; rare towards the south and confined to rich valleys; very common in the mountains of Pennsylvania and New York. It disappears west of the mountains; but is replaced by other congeneric species.

Qualities—The whole plant has a strong balsamic smell, somewhat similar to that of *Salvia Sclarea*: it is sweeter and stronger in the blossoms and worse in the root. It affords by distillation an essential oil, possessing the same smell. The taste is pungent and warm.

PROPERTIES—Vulnerary, coroborant, carminative, subtonic, diuretic, and a warm stimulant. It appears to combine the properties of Sage, Mint and Woundwort: (*Anthyllis Vulneraria*) therefore it may be substituted to them. It is one of the plants called *Heal-all*, in the United States, because they cure sores and wounds: the Indians employ this plant for that purpose. In the mountains and hills of Virginia, Kentucky, Tennessee and Carolina, this genus is considered as a panacea, and used outwardly and inwardly in many disorders; it is applied in poultice and wash for bruises, sores, blows, falls, wounds, sprains, contusions, and taken like tea for head aches, cholics, cramps, dropsy, indigestion, &c. The whole plants

are used, both fresh and dry: they are also employed for the sore-backs of horses.

According to Schoepf, it is useful in the dumb fever, lochial cholic, bites of snakes, and for rheumatic pains, in strong frictions of the leaves. Dr. Mease relates that the root infused in cider has cured the dropsy.

SUBSTITUTES—*Acorus Calamus*—Aniseed—*Salvia* or Sage—*Monarda* or Horsemint—*Mentha* or Mint—*Cunila* or Dittany—and many other labiate plants.—For sores *Baptisia tinctoria*—*Solanum Virginicum*—*Galax rotundifolia*, &c.

REMARKS—All the other species of this genus have the same smell, taste and properties: they are equally employed. The *C. anisata* has a finer smell, somewhat similar to aniseed, by which it may be easily known. The other species are so much alike as to be easily blended, or taken for each other. They have, however, narrower leaves, often hairy: and the *C. tuberosa* has a larger softer root.

The most common and officinal in Kentucky, Ohio &c. is a new species, which I have called *C. angustifolia;* it is about a foot high, has smooth lanceolate or oblong leaves, three inches long, acute at both ends, margin crenate serrate; racemes slender, flowers small, yellowish, teeth of the calix acute, shorter than the tube; corolla less fringed than in the others; two long stamina.

No. 24.

COMPTONIA ASPLENIFOLIA.

SHRUBBY SWEETFERN.

No. 24.

COMPTONIA ASPLENIFOLIA.

English Name—SHRUBBY SWEETFERN.
French Name—Comptonier odorant.
German Name—Streifenfarren.
Officinal Names—Compton. ulcifilix folia.
Vulgar Names—Sweet-fern, Sweet-bush, Sweet-ferry, Fern-bush, Fern-gale, Spleenwort-bush, &c.
Synonyms—*Liquidambar peregrinum & L. asplenifolia* of Linnæus. *Myrica asplenifolia* Gronovius.
Authorities—Linnæus, Aiton, Michaux, Pursh, Schoepf, B. Barton, W. Barton, M. M. fig. 19, &c.

Genus Comptonia—Monoical, amentaceous—M. fl. in long cylindrical catkins, scales one flowered, perigone two-leaved, three forked stamina, six anthers. F. fl. in globular inferior catkins, scales one flowered, perigone six leaved, one pistil, two styles, fruit ovate, evalve, one-seeded nut or achene.

Species C. Asplenifolia—Shrubby, leaves crowded, sessile, narrow lanceolate, alternately crenate-sinuate.

DESCRIPTION—A small shrub from two to five feet high, with many crooked branches and long horizontal roots—Leaves alternate, crowded, sessile, with two small oval acute stipules at the base, from three to five inches long, half an inch broad, acute at both ends, with a strong middle nerve; each side regular-

ly sinuate by large equal obtuse lobules—Flowers appearing before the leaves; the male in many superior lateral and cylindrical catkins, the female inferior in a few globular or oval lateral catkins—scales of both catkins imbricated concave, reniform, acuminate, caducous and one flowered. Male flowers with a two-leaved perigone, shorter than the scales, each part equal and keeled. Six stamina or anthers, on three short forked filaments. Female flowers with a bristly perigone of six filiform persistent segments, longer than the scales. Pistil oval, two capillary styles. Seeds evalve oval nuts or achenes, compressed yellow, forming a round burr.

HISTORY—This pretty shrub forms by itself a solitary genus of the natural order AMENTACEOUS, dedicated by Solander and Aiton to Compton, an English bishop, and friend of Botany. It may be placed in MONOECIA *triandria or hexandria* or *triadelphia!*

It has been called Sweet-fern, owing to its singular leaves, similar to the Spleenwort fern, and having a pleasant spicy scent. It blossoms very early in March and April, before the leaves are unfolded.

Linnæus had united it to *Liquidambar* or the sweet gum tree, and Gronovius before him to *Myrica* or wax shrub, which have a similar inflorescence.

LOCALITY—From New England to Carolina, on hills and alluvial plains, in poor, rocky and sandy soils, forming vast glades in thin woods. Common both on the Allegheny mountains and the plains of

New Jersey, &c. but nearly disappearing west of the mountains, and unknown to the western plains.

QUALITIES—The whole plant, but chiefly the leaves have a peculiar strong smell, of a sweet and balsamic nature; becoming stronger by pressing or bruising them. It contains the benzoic acid, tannin and a resinous substance. The taste is balsamic and pungent.

PROPERTIES—Astringent, tonic, calefacient, cephalic, balsamic, expectorant, &c. It possesses all the properties of the tonic and astringent balsams. Barton recommends it for diarrhea, loose bowels and the summer complaint of children, or cholera infantum, in the form of a weak decoction; but it is used in Pennsylvania and Virginia for many other diseases, such as all children's bowel complaints, (where it forms a grateful drink for them) in rhachitis, in debility, in fevers as a diluent tonic; in rheumatism and contusions it is less available. The root chewed stops blood-spitting, according to Schoepf. Upon the whole this shrub appears to be deserving of further attention, I have seen it employed throughout the country as a substitute or auxiliary to the more expensive balsams, in asthma, bronchitis, &c.

SUBSTITUTES—Storax—Tolu—Sassafras—*Laurus benzoin*—Agrimony—*Mitchella repens*—*Gaultheria procumbens*, and all mild balsamic astringents.

No. 25.

CONIUM MACULATUM.

English Name—COMMON HEMLOCK.

French Name—Cigue commune.

German Name—Gemeine Schierling.

Officinal Name—Conium, Cicuta officinalis.

Vulgar Names—Poison Parsley, Spotted Parsley.

Authorities—Linnæus, Schoepf, Murray, Cullen, Coxe, many Dispens. Bigelow, fig. 11, and Seq.

Genus Conium—Flowers umbellate, with many leaved involucres, and dimidiate involucels. Calix concrete with the pistil, margin entire. Petals five entire inflexed. Stamina five, Styles two. Fruit bipartible, two seeded, oval, compressed, ribbed, ribs wrinkled or crenate.

Species C. Maculatum—Stem round, hollow, striated, and spotted: leaves decomposed, bi or tripinnate, folioles opposite, sessile, pinnatifid: fruit with undulated ribs.

DESCRIPTION—Root biennial, elongated, branched or fusiform—Stem from two to four feet high, branched, smooth, round, striated, hollow, jointed, and with oblong purplish dotts—Leaves smooth, decomposed, two or three times pinnate, with short sheathing petioles, leaflets or folioles pinnatifid, oval, nearly obtuse, often confluent.

No. 25.

CONIUM MACULA'TUM.

COMMON HEMLOCK.

Flowers in terminal peduncled umbels, with an involucre of ten to twelve lanceolate, reflected, acute leaflets—Umbellules from six to nine on long peduncles, involucels with three or four similar leaflets situated on one side. Flowers very small and white. Calix without apparent teeth—Petals five, oval, inflexed, obtuse and entire at the end—Stamina five, as long as the petals. Pistil coherent with the calix, rounded, bearing the petals and stamina: Styles two, reflexed outside. Fruit nearly oval compressed, with crenate ribs, separating into two elliptical seeds, flat inside, convex outside.

HISTORY—The *Conium* of the Greeks and the *Cicuta* of the Romans, was a poisonous plant, the juice of which was used to produce death in Ceos and Athens. Socrates and Phocion, two virtuous, eminent and innocent Athenians, were condemned to drink it, and their death has rendered famous, that poisonous potion. Either this plant or the *Cicuta virosa* of Europe afforded it, or a compound beverage was made from several poisonous umbelliferous plants, which procured a speedy but tranquil dissolution.

It has since been found, that these plants, like many other poisons, have valuable medical properties, nearly similar in all the deleterious species of this family. The *Conium maculatum*, is the most employed, and must be distinguished from others, either more or less active, by its botanical characters; besides its strong smell, spotted stems, parsley leaves, &c. The power of this plant vary exceedingly, ac-

cording to the place and climate where it grows, the time when collected, and the preparations of it.

It is most powerful in warm climates, in the summer, and when full grown. Some persons are hardly affected by it: while others are more susceptible; on these it produces dizziness, nausea, disturbed sight, faintness, &c. which symptoms appear in half an hour and last half a day or more. A large dose produces worse symptoms, vertigo, paralysis, convulsions and death. There is little danger of being poisoned by this plant through mistake, owing to its bad smell: yet there are instances on record that children have taken it for parsley and the root for carrot: whereby sickness and death have been produced. In the United States, the *Cicuta maculata* is more dangerous on that score.

This plant blossoms in summer from June to August. It belongs like all the UMBELLATE to PENTANDRIA *digynia* of Linnæus.

LOCALITY—Native of Europe; but now naturalized in New England, New York, Pennsylvania, Virginia, Ohio, &c. mostly found in old fields, near roads and fences, on the banks of rivers, &c. Very common in some local spots; but not found every where.

QUALITIES—The whole plant has a disagreeable virose smell (somewhat like the urine of a cat) which becomes stronger when the leaves are bruised. The root contains in the spring a milky juice, highly virulent. The essential active acrid principle of this plant appear to reside in a green resinous substance, called *Conein*e, dissipating by exposure to air and

light, but not by fire. It contains Gum, Extractive, a green fecula, Resin, Albumen and many alkalies; but no essential oil. The taste is bitter and nauseous.

PROPERTIES—A powerful acrid narcotic and resolvent; but the uncertainty of its action lessens its value. It is never dangerous in very small doses, often repeated, and gradually increased. It is also an efficient anodyne, sedative and antispasmodic, useful to allay pain in acute diseases. It has been recommended in many chronic diseases, such as cancer, epilepsy, mania, syphilis, &c. but in those cases it acts only as a palliation to pain, like opium, to which it is often preferable, as less constipating.

The diseases in which it has been found useful, are chronic abcesses, schirrose tumors, foul ulcers, rickets, caries, repelled itch, abdominal and internal swellings, obstructions, hemicrania, dropsy of the joints, obstinate ophthalmia and cataracts, &c. In all these cases it acts as an efficient repellent and resolvent.

True Schirrus and Cancer cannot be cured by it; but obstinate and scrofulous tumors or swelled testicles (which terminate in, or are mistaken for schirrus) have been removed by its use.

The effects of this plant are so variable, that some physicians have pronounced it inert or a mere diuretic, having been deceived in their prescriptions owing to bad preparations or otherwise.

In tic douleureux it has afforded relief or even effected a cure, when nothing else could avail. While

it is highly extolled in jaundice, removing the yellowness in a short time, and curing the disease, when not too complicated. It has also a relaxing effect in facilitating the passage of biliary concretions.

Although recommended for the whooping cough, it is not a safe medicine for children.

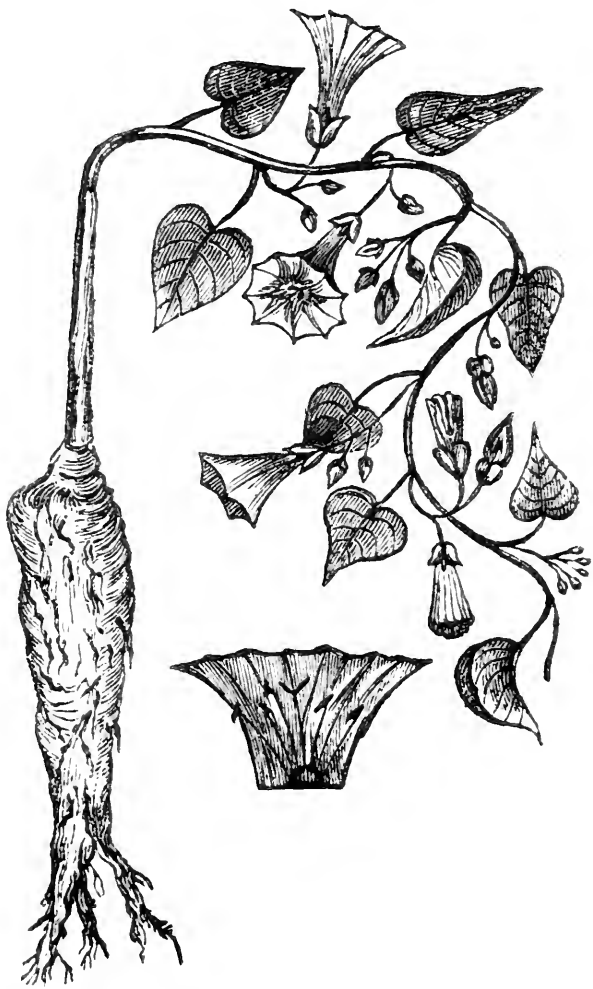
The best way to administer it, is that of the powdered leaves, beginning with two or three grains, and increasing the doses gradually. The leaves must preserve their green color to be efficient. Yet the most usual form is the green extract, beginning with one to five grains; but it is difficult to regulate the doses, each parcel having a different strength, and being even nearly inert when made with dry leaves, or young plants, or with too much heat, or when become old. It would therefore be desirable to procure the *Coneine* of a permanent strength. An extract from the seeds is said to be stronger and produces giddiness very soon. Externally it has been used in cataplasms for carcinoma, syphilis, leprosy and obstructions. Vinegar and lemon juice are the antidotes for the poison or over-doses of this plant.

Substitutes—*Cicuta maculata—Angelica atropurpurea—Datura stramonium—Hyosciamus niger—Solanum dulcamara*—Opium, &c.

Remarks—The white and milky root of this plant is considered a violent poison and not used, although it might be more efficient than the leaves. It cannot contain however the active principle called *Coneine*, which is green, and it is found that whenever the leaves or extract lose their green color they become inert.

No. 26.

CONVOLVULUS PANDURATUS.



MECHAMECK BINDWEED.

No. 26.

CONVOLVULUS PANDURATUS.

English Name—MECHAMECK BINDWEED.
French Name—Liseron mechamec.
German Name—Geigenblattrige winde.
Officinal Names—Convolv. pandurati seu Pseudo-mechoacana, radix.

Vulgar Names—Wild Potatoe, Wild Rhubarb, Mechameck, Wild Jalap, Man in the ground, Mecoacan, Potatoe Vine, Kussander, Kassader, &c.

Authorities—Linnæus, Schoepf, Coxe, Disp. Bigelow Seq. B. Barton, Nuttal, W. Bart. V. M M. fig. 23.

Genus Convolvulus—Calix five parted, segments unequal imbricated. Corolla bell or funnel shaped, limbus equal, nearly entire, with five folds and teeth. Five unequal stamina on the corolla. One pistil surrounded by a glandular disk, one style, stigma bifid or bilobe. Capsule bilocular, few seeded.

Species C. Panduratus—Root tuberose; stem twining; leaves cordate, acute, entire or pandurate; peduncles multiflore, calix mutic, corolla funnel-shaped.

DESCRIPTION—Root perennial, very large, cylindric or fusiform, from two to four feet long, as thick as the arm, yellowish outside, whitish and milky inside, with many fissures, often branched below

and attenuated above.—Stem procumbent or climbing, round, purplish, from three to twelve feet long, sometimes branched—Leaves cordate at the base, broad, alternate, petiolate, margin entire or undulate, or lobed on the sides like a fiddle, very sharp, but hardly acuminate, smooth, deep green above, pale green below.

Flowers in fascicles of two to six, on long peduncles, longer than the petioles, and axillary, pedicels unequal. Calix with five unequal segments, ovate obtuse, concave, mutic, two smaller opposite outside—Corolla large, funnel shaped, about two or three inches long, and as broad above, base tubulose, color white or incarnate or purplish. Stamina white, filaments filiform, unequal, inclosed, anthers oblong. Style white, filiform, stigma bipartite, segments linear. Capsule oblong, with two cells and four seeds.

HISTORY—A great botanical confusion had arisen in this genus, and the natural tribe of VOLVULIDES or *Convolvulacea*, of which it is the type. The genera of this family had not been well fixed, and *Ipomea* particularly was so little distinguished from *Convolvulus* that many species were considered as belonging to both! It is now ascertained (as I pointed out in a dissertation published in 1820) that the inequality of the stamina is the principal character of the family, and that *Ipomea* is distinguished, not by the variable corolla, but by the trilocular capsul and capitate or trilobe stigma. Both genera contain a multitude of species, many of which are medical, such as *C. Scamonia, C. turpethum, C. jalapa,* &c. which are all drastic or cathartic.

The true jalap of commerce has been ascribed to several plants, and a controversy exists on the subject. This plant is one of the false jalaps, the others are the *Ipomea macrorhiza* of Michaux, found from Georgia to Yucatan on the sandy shores, and several Bindweeds growing in South America. The true *C. jalapa* appears to grow on the Andes of South America and Mexico.

Our *C. panduratus* has also been mistaken for Scamony, Rhubarb and Mechoacan. The native name of Mechameck ought to be given to it as a distinctive appellation. It blossoms in summer, from June to August. It was named *panduratus* by Linnæus, because the leaves are often lobed on the sides like a fiddle; but this does not always happen, and some plants have all the leaves cordate and entire.

The cathartic properties of this plant and of *Ipomea macrorhiza* have been denied by Bigelow, Baldwin, &c. and even the latter considered as edible; but it appears that all the species of these two genera, having milky roots, are more or less cathartic, particularly when fresh.

They both belong to PENTANDRIA *monogynia* of Linnæus. *Convolvulus*, (like *Evolvulus*) derives from the twining habit of the genus.

LOCALITY—Common all over the United States, from Canada and New England to Florida and Missouri, in poor and loose soils, sandy and slaty fields, gravelly hills and alluvions, open glades and thickets; but seldom in shady woods.

QUALITIES—The taste and smell of the root, approximate to Scamony and Jalap; but are less nau-

seous and acrid. This root may be known by its size, yellowish color, and crevisses. It is milky when fresh. The extract from it resembles Scamony and possesses the same properties.

PROPERTIES—Cathartic, diuretic and pectoral. It acts like jalap, rhubarb, briony and scamony at a larger dose, when given in substance; but the extract from the fresh root is more efficient, and is a mild cathartic at a small dose of ten or twelve grains. It is seldom used by physicians, but often by Indian doctors. It is a safe substitute for the more costly roots above mentioned, and as a root often weighs twenty pounds, it might be made an article of trade. As a diuretic it is useful in gravel, strangury, dropsy, &c. it enables to evacuate small calculous granulations, and may be taken in substance or decoction. As a pectoral it has been used for consumptive coughs and asthma; a syrup is made of it with Skunk cabbage, for that purpose.

SUBSTITUTES——Jalap——Rhubarb——Scamony——Briony—*Erigeron Sp.*—*Pyrola umbellata*—*Asclepias tuberosa*, &c.

REMARKS—It is asserted that the Indians can handle Rattle-snakes with impunity, after wetting their hands with the milky juice of the root of this plant, or of *Arum triphyllum.*

Henry's figure is erroneous, having triangular leaves and bracteolate flowers.

The root must be collected at the end of summer; and if to be dried ought to be cut in slices.

No. 27.

COPTIS TRIFOLIA.

COMMON GOLDTHREAD.

No. 27.

COPTIS TRIFOLIA.

English Name—COMMON GOLDTHREAD.

French Name—Coptis triphylle.

German Name—Kleinste christwurz.

Officinal Names—Helleborus trifolius, Coptis, Fibraurea, &c.

Vulgar Names—Gold-Thread, Mouthroot.

Synonyms—*Helleborus trifolius* Linnæus, &c. *Fibra aurea* Colden and Schoepf. *Anemone groelandica* Oeder. *Chryza fibraurea* Raf.

Authorities—Linnæus, Michaux, Pursh, Salisbury, Schoepf, Pallas, Oeder, Thacher, Coxe, B. Barton, Bigelow, M. B. fig. 5, & Sequel, W. Bart. V. M. M. fig 34.

Genus Coptis—Calix corolliform and caducous, with five or six leaves. Corolla with five or six nectariform cucullate petals. Many hypogynous stamina. Pistils five to eight, stipitate, germs oblong, styles recurved. Capsuls as many, stipitate, oblong, beaked, one celled, many seeded, dehiscent longitudinally.

Species C. trifolia—Roots filiform, creeping; leaves sub-radical, ternate; folioles sessile, rounded, crenate; scapes one flowered.

DESCRIPTION—Roots perennial, creeping, filiform, of a bright yellow, with many small fibres—Caudex or base of the scapes and radical leaves, cover-

ed with imbricate scales, ovate acuminate and yellowish—Leaves evergreen, on long slender petioles, proceeding from the caudex, with ternate folioles, sessile, rounded or obovate, base acute, margin with unequal acuminate crenatures and lobes, surface smooth, firm and veined. Scapes as long as the leaves, slender filiform, with one flower and a minute mucronate bract under it.

Flowers about half an inch wide, with a white corolliform calix of five, six or seven sepals or folioles, oblong, obtuse, concave. Petals as many, shorter, nectariform, obovate, hollow, yellow at the top. Stamina many, filaments slender and white, anthers rounded, adnate and yellow. Pistils from five to eight. stipitate germs shorter than the gynophore or base, oblong, acute, compressed. Styles short and curved, stigmas acute. Capsules like the pistils naked, the calix having fallen off, umbellate, on long divaricate pedicels, oblong rostrate, unilocular, dehiscent on the inner side, and many seeds attached to the other side.

HISTORY—This plant was erroneously united to *Helleborus* by Linnæus. I proposed to call it *Chryza*, in 1808: it was since called *Coptis* by Salisbury; although my name is anterior and more descriptive, and *Fibraurea* of Colden would have been good also, I am so little tenacious as to admit the *Coptis* which has already been adopted by many. The principal distinctions are found in the stipitate pistils and capsules, besides petals not bilabiate. My new genus *Enemion biternatum*, differs from Coptis by want of

petals, and two seeded capsuls. Many botanists call the petals of this plant nectaries, and the calix corolla, thus saying that they have no calyx: but the natural affinities teach that wherever the perigone is double, the inner range is the corolla, whatever be its form.

Both *Coptis* and *Helleborus* belong to POLYANDRIA *polygynia* of Linnæus, and to the RANUNCULACEOUS tribe, or natural order ADNANTHERIA, section with irregular petals, and dehiscent fruits. This plant blossoms early in the spring of the cold regions or in May.

The roots are the only parts used; they are of a fine golden color, whence the name. They ought to be collected in the summer, and are easily dried; but not easily reduced to powder. The plant itself is a pretty evergreen, having the appearance of the strawberry plant.

LOCALITY—A borcal plant found from Canada to Greenland and Iceland on the east, and to Siberia on the west. The most southern limits are New England, New York, and the shores of Lake Erie. It is commonly found in mossy swamps and bogs of evergreen woods; but also on the rocks of the White Mountains, Labrador, Newfoundland, &c.

QUALITIES—A pure intense bitter, without smell, nor astringency, consisting of extractive matter and a bitter principle, soluble in water and alcohol: the tincture is yellow.

PROPERTIES—Tonic and stomachic, promoting digestion, strengthening the viscera, useful in dyspepsia, debility, convalescence from fevers, and whenever

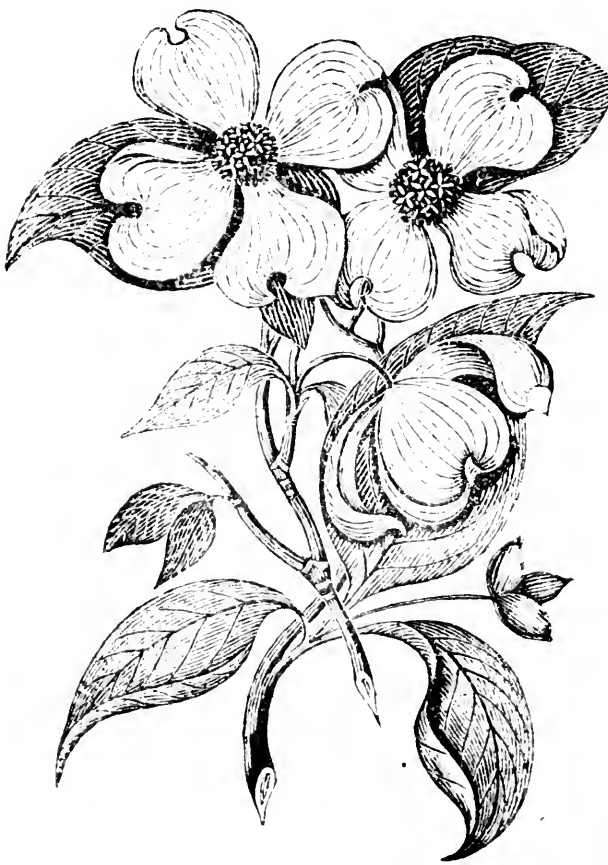
a pure bitter is required; being a good substitute for Quassia, Columbo, Gentian, &c. A tincture made with an ounce of the roots in a pound of diluted alcohol, is recommended in doses of a tea spoonful thrice a day, or ten to twenty grains of the powder: both agree with the stomach.

It has been used for ulceration of the mouth, in gargle, &c. but Bigelow pretends that it is inert in that case, being devoid of astringency; and to other articles added to it, are to be ascribed the benefit it may have afforded.

Substitutes—Quassia—Columbo—*Menyanthes trifoliata—Frasera verticillata—Aletris farinosa—Sabbatia angularis,* and other pure bitters.

No. 28.

CORNUS FLORIDA.



COMMON DOGWOOD.

No. 28.

CORNUS FLORIDA.

English Name—COMMON DOGWOOD.
French Name—Cornouiller fleuri.
German Name—Schonbluhender Hartriegel.
Officinal Name—Cornus florida.
Vulgar Names—Dogwood, Dogtree, Boxtree, Florid Cornel, Monhacaniminschi, &c.
Authorities—Lin. Mich. Pursh, Schoepf. Catesby, Thacher, Coxe, Carpenter, Elliot, B. Barton, Big. fig. 28, and Seq. W. Bart. fig. 3, &c.

Genus Cornus—Calix symphogyne, four toothed. Petals four, small and broad. Stamina four, epigyne alternating with petals. One style and stigma. Fruit a drupe inclosing a bilocular two seeded nut.

Species C. Florida—Asborescent; leaves opposite, ovate, acuminate, base acute, glaucous beneath: Involucres corolliform, nearly obcordate; drupes ovate and scarlet.

DESCRIPTION—Stem rising from fifteen to thirty feet, with a rough blackish bark full of fissures: branches opposite, spreading, with reddish bark and rings where the old leaves grew.—Leaves opposite, petiolate, oval, entire, base acute, end acuminate, pale beneath, with strong parallel veins.

Flowers terminal, appearing when the leaves are young, with a large four leaved involucre three inches broad, commonly mistaken for the blossom, white, obcordate, veined. The true flowers are in the centre, small, crowded, sessile, yellowish. Calix campanulate, symplrogyne, with four obtuse teeth. Corolla with four oblong, obtuse petals. Stamina four erect, anthers oblong, style short, erect, stigma obtuse. Fruits several oval scarlet drupes, with a nut inside having two cells and two seeds.

HISTORY—The genus *Cornus* or Cornel, must be divided into two sections, those species having the flowers capitate, sessile, and with an involucre, are the true Dogwoods, (*Cynoxylon*), and those with cymose, naked flowers, are the true Cornels. It belongs with *Hedera* to the natural family of HEDERACES, and to TETRANDRIA monogynia of Linnæus. *Cornus* is the ancient latin name of the Cornels, and *florida* implies that the blossoms are more conspicuous than in any other species.

The *C. florida* is a handsome tree, enlivening the woods in the spring by a profusion of large white blossoms, and bearing in the fall clusters of beautiful scarlet berries. In Louisiana, where it is called *Bois bouton*, or *Bois de fleche*, (Budwood and Arrowwood) it blossoms in February; in the middle states in April and May, and more northwardly in June. It lasts a fortnight in full bloom, and every where indicates according to the Indians, when Indian corn is to be planted.

This tree grows very slow, and the wood is hard, compact, heavy and durable; it is white outside, and chocolate color in the centre, taking a very fine polish. It may be used like Boxwood, and when stained of a light yellow color, resembles it altogether. All kinds of tools and instruments are made with it, also cogs of wheels, teeth of harrows, spoons, &c.

Locality—All over the United States, and almost in every soil, from Massachusetts to Louisiana, and from Florida to Missouri. Most abundant in swampy and moist woods.

Qualities—The bark of the root, stem and branches is bitter, astringent and slightly aromatic. By analysis it has been found to contain in different proportion the same substances as *Cinchona*, having more of Gum mucilage, extractive and Gallic acid, and less of Resin, Quinine, and Tannin. The Quinine of the *Cornus* has been called Cornine, it has all the properties of the genuine Sulphate of Quinine, but very little is afforded. The double distilled water of *Cornus* is lemon color, that of Cinchona is reddish.

The extract of *Cornus* is less bitter and more astringent than that of the best *Cinchona*, but preferable to the extract of the inferior kinds.

This extract contains all the tonic properties, the resin alone is merely stimulant. The bark of the root is the strongest; it is more soluble in water than *Cinchona*. The fresh bark frequently disagrees with the stomach, and is improved by keeping at least one year.

PROPERTIES—Tonic, astringent, antiseptic, coroborant and stimulant. It is one of the best native

substitutes for *Cinchona*, although evidently different in some respects; the powdered bark quickens the pulse, and sometimes produces pains in the bowels; but the Sulphate of Cornine and the extract are not so stimulant. They are used in intermittent and remittent fevers also, typhus and all febrile disorders. The doses of the powder are from twenty-five to thirty-five grains, often repeated. The Cornine like Quinine.

In cases of debility it acts as a corroborant; it may be joined in practice with Gentian, Colombo, Camomile, Liriodendron, Seneca root, &c. It is often used in decoction in the country, and even the twigs are chewed as a prophylactic against fevers. Drunkards use a tincture of the berries as a bitter for the same purpose and for indigestion.

The flowers have the same properties, and are chiefly used by the Indians, in warm infusion for fevers and cholics. All these preparations have a more agreeable bitterness than the Peruvian bark.

It is said that the twigs rubbed or chewed, clean and keep sound the gums and teeth. A decoction of the bark is used to cure the distemper of horses called the yellow water. Joined with sassafras it is employed in strong warm decoction to clean foul ulcers and cancers. Lastly, a kind of black ink can be made with the bark, in the usual way, instead of galls.

Substitutes—*Cinchona—Liriodendron—Magnolia sp—Pinckneya—Cephalanthus*, and most of the astringent tonics, besides several species of the same genus.

Remarks—Almost all the species of this genus have more or less the same tonic properties, and may be

substituted to the *C. florida.* Three of the best known as most efficient will be mentioned here.

1. *Cornus Sericea* or Blueberry Cornel, vulgarly called Swamp Dogwood or Rose Willow, is a shrub from six to twelve feet high, growing from Canada to Virginia, near swamps and streams. There is a figure of it in W. Barton, fig. 9. The leaves are like those of *C. florida*, and silky beneath, but the flowers are very different, in large terminal cymes, without involucrum, yellowish white, and succeeded by large clusters of small round blue berries.—The bark is less bitter, more astringent and pleasant to the taste than in C. *florida.*

2. *C. circinnata* or Round leaved Cornel, also called Alder Dogwood, is a shrub with warty twigs, large rounded leaves, woolly beneath: the flowers are in cymes, without involucrum. It grows from Canada to Pennsylvania.—Prof. E Ives of New Haven, and Dr. A. Ives of New York, extol this kind, they say it resembles the pale Peruvian Bark, *Cinchona lancifolia*: an ounce of the bark yields by boiling 150 grains, of an astringent and intensely bitter extract. In use it is found preferable to Colombo and *Cinchona cordifolia*, it is much employed in the Northern States, in substance and otherwise, for diarrhœa, dyspepsia; but is too heating in fevers.

3. *C. alba* or Wax-berry Cornel, is also a shrub, growing from New England to Siberia in Asia, with broad ovate leaves, white beneath, flowers in cymes, berries round, white like wax.—All these blossom from May to June: many birds are fond of their berries and the beavers eat their bark.

No. 29.

CUNILA MARIANA.

English Name—AMERICAN DITTANY.
French Name—Cunile d'amerique.
German Name—Americanische cunile.
Officinal Name—Cunila herba.
Vulgar Names—Mountain Dittany, Stone Mint, Wild Basil, Sweet Horsemint, &c.
Authorities—Linnæus, Schoepf, Mich. Pursh, Elliot, Torrey, Stokes, W. Barton, fig. 42, &c.

Genus Cunila—Calix tubular, striated with five subequal teeth. Corolla tubular, ringent, upper lip erect flat emarginate, lower lip three parted. Two exerted fertile stamina, two sterile stam. very short. Germen four lobed, style exerted, stigma lateral. Four seeds within the calix closed by hairs.

Species C. Mariana—Smooth, stems slender and branched; leaves opposite, sessile, punctate, ovate, remote, serrate; flowers in terminal fasciculate corymbs.

DESCRIPTION—Root perennial, fibrous, yellow.—Stem about a foot high, smooth, yellowish or purplish; slender, hard brittle, with many brachiate remote branches.—Leaves remote, sessile, smooth, dotted, pale green, glaucous beneath, base subserdate, end acuminate or sharp, margin with small remote acute teeth, nerves regular, texture dry.

Flowers small but handsome, of a pink or white

No. 29.

CUNILA MARIANA.

AMERICAN DITTANY.

color, forming terminal clusters or corymbs, by the union of several branched fascicles of three to seven flowers, with very small short oblong bracteoles. Each flower peduncled and naked, calix green nearly cylindrical with ten furrows, and five small sharp teeth nearly equal. Corolla twice as long as the calix, nearly cylindric, with two short lips, lower lip larger with three rounded lobes, upper lip smaller, flat and notched. Four stamina, two of which are long, slender and protruding with the style, bearing small didymous anthers: two small, very short, without anthers.—Fruit formed by four small obovate seeds at the bottom of the persistent calix, mouth of it closed by hairs.

HISTORY—This genus belongs to the great natural order of LABIATE, section with two fertile filaments, next to the genera *Lycopus*, *Collinsonia* and *Hedeoma*. It ranks with them in *Diandria monogynia* of Linnæus. It contains now only this species, which has been called *mariana* because first sent to Europe from Maryland. Linnæus had united it to *Satureja* at first, and called it *S. origanoides*. When he made a new genus of it, he united with it the *C. pulegioides*, which is now *Hedeoma pulegioides*: these are examples of the botanical vacillations and errors, to which great writers are liable when they wish to improve the science, and are not ashamed of correcting themselves.

The *C. mariana* is a pretty plant, with a very fragrant smell, similar to Marjoran and Dittany. It

is commonly called by this last name throughout the United States; but is very different from the Dittany of the gardens, which is the *Dictamnus fraxinella*, and the other Dittanies of Europe, *Origanum dictamnus*, *Marrubium pseudodictamnus*, &c. Our Dittany is peculiar to America, and distinguished by its corymbose flowers, which blossom in summer from July to September.

Locality—All over the mountains and dry hills from New England to Kentucky and Carolina, common among rocks and sides of hills, unknown in the plains and alluvions.

Qualities—The whole plant has a warm fragrant aromatic pungent taste and smell, residing in an essential oil, which can easily be extracted by distillation, and approximates to the oil of *Origanum*, but is more balsamic. It is the most fragrant of all the native labiate plants, and the essential oil has a very strong balsamic fragrance.

PROPERTIES—Stimulant, nervine, sudorific, subtonic, vulnerary, cephalic, &c. The whole plant is used, and usually taken in warm infusion: Dittany tea is a popular remedy throughout the Country for colds, headaches, and whenever it is requisite to excite a gentle perspiration. It partakes of the properties of all the grateful aromatic labiate plants, and also of Camomile, *Anthemis Cotula*, and the *Eupatorium perfoliatum*: while it affords a more palatable drink. Its fragrant tea is preferable to that of Sage and *Monarda*, it has neither the pungency of Mint, nor the nauseous smell of Pennyroyal or

Hedeoma. *Solidago Odora* comes nearest to this, by its fragrance; but is weaker and not so grateful. It relieves nervous headaches and hysterical disorders. It is used in Carolina, Kentucky, &c. in fevers to excite perspiration, and suppressed menstruations, &c. It is a useful drink in nervous diseases, cholics and indigestion. Externally it is employed like *Collinsonia* for bruises, sprains, &c. but is not so efficient. According to Schoepf, it was one of the plants resorted to for curing the bites of snakes; the juice was mixed with milk for this purpose. There are fifty plants in the United States, employed occasionally as an antidote for this purpose, which merely act as sudorifics The essential oil possesses all the properties of the plant, and a few drops of it are sufficient to impart them to mixtures.

Substitutes—Besides the plants mentioned above, all the mild sudorifics, and *Eryngium yuccefolium*, Yarrow, Tansey, Snakeroots, *Inula helenium*, &c.

No. 30.

CYPRIPEDIUM LUTEUM.

English Name—Yellow Ladies' Slipper.

French Name—Sabot de venus jaune.

German Name—Gelb Frauenschuh.

Officinal Name—Cypripedium radix.

Vulgar Names—Mocasin flower, Yellows, Bleeding heart, American Valerian, Yellow Umbil, Male Mervine, Noah's Ark, &c.

Synonyms—*Cypripedium Calceolus* Var. b. Lin. —*Cypr. luteum* Aiton—*C. flavescens* Redoute—*C. pubescens* and *C. parviflorum* Wildenow, Salisbury, Persoon, Pursh, Elliot, Torrey, Eaton, W. Barton, &c.

Authorities—Wildenow, Aiton, Pursh, Elliot, W. Bart. flora fig. 74, &c.

Genus Cypripedium—Perigone symphogyne concrete with the germen at the base, with five unequal sepals or divisions, superior and often colored; the innermost or labellum larger, different, ventricose, split. Central pillar or gonophore bearing two Anthers and a terminal lobe.

Species C. Luteum—Stem leafy, leaves broad, often acute and pubescent; flowers with the labellum shorter than the other sepals, saccate and compressed, two inner sepals linear spiral and very long, terminal central lobe deltoid nearly obtuse.

DESCRIPTION—Roots perennial with many long, thick, fleshy cylindrical and flexuose fibres, of a pale

No. 30.

CYPRIPEDIUM LUTEUM.

YELLOW LADIES' SLIPPER.

yellowish cast, diverging horizontally from the caudex.—Stems one to five from the same caudex, simple, erect, often pubescent and angular, rising one or two feet, three to seven leaves, and one to three flowers. Leaves alternate, sessile, sheathing, ovate or oblong, acute pubescent or smooth, but always entire and with many parallel nerves, green above, paler beneath.

Flowers sessile, when more than one, each has a bracteal leaf. Germen concrete or inferior, green, cylindrical, often curved. Perigone with five unequal and different sepals, called petals by the Linnean Botanists: two are external oblong or lanceolate, acute, longer than the labellum and green: two are internal longer, narrower, spirally contorted and green: the fifth or innermost and lower, called Labellum, is totally different from the others, shorter but larger, yellow with or without red spots, hollow like a bag, convex beneath, rounded in front, split above with inflexed margins. Style and stamina concrete in the centre, above the germen, forming a central pillar, flattened above into an oblong deltoid lobe, supposed to be the stigma by some Botanists, and bearing before two anthers, lodged in separate cells.—The fruit is an oblong capsul, with one cell, three valves, and a multitude of minute seeds, as in all the Orchideous tribe.

HISTORY—The natural order of the ORCHIDEOUS to which this plant belongs, is a very striking and peculiar tribe of Monocotyle vegetables, which even Linnæus considered as natural, and put in his class

Gynandria and order *Diandria*, although most of them are truly monandrous. He called their perigone, a corolla, because often colored, and deemed the labellum a nectary, while it is evidently a part of the perigone or sexual covering. The generic name of *Cypripedium*, means Venus' Shoe; it is a splendid genus containing several beautiful American and Asiatic species. Many Botanists have made two species, *C. pubescens* and *C. parviflorum* of this, to which the previous and better name of *C. luteum* ought to be restored. I have ascertained that they form only one species, affording many varieties, some of which are

1. C. L. Var. *pubescens*, entirely pubescent even the flowers.

2. C. L. Var. *glabrum*, nearly smooth.

3. C. L. Var. *grandiflorum*, slightly pubescent, labellum very large.

4. C. L. Var. *parviflorum*, slightly pubescent, labellum small.

5. C. L. Var. *maculatum*, labellum more or less spotted, with red dots, lobule often red.

6. C. L. Var. *biflorum*, with two flowers and bracteoles.

7. C. L. Var. *concolor*, the whole flower yellow or yellowish, unspotted.

8. C. L. Var. *angustifolium*, leaves and bracteoles lanceolate.

A multitude of intermediate varieties or deviations may be seen, with undulate or spiral sepals, obtuse or acute lobule, broader or narrower leaves, &c.

This plant blossoms in May and June; it is much valued in gardens for its beauty and singularity, but it is difficult to cultivate: it will seldom grow from seeds; the roots must be taken up with earth round them, and transplanted in a congenial rich light soil. For medical use, they must be collected in the fall, or early in the spring, carefully dried and reduced to powder.

LOCALITY—Found all over the United States, from New England to Louisiana; but very rare in some places, while it is common in the hills and swamps of New York, the Highlands, Green and Catskill Mountains, and also in the glades and prairies of the Western States.

QUALITIES—The roots are the only medical parts: they have a pungent, mucilaginous taste, and a peculiar smell, somewhat nauseous. They contain extractive, gum, fecula, and perhaps a small portion of essential oil.

PROPERTIES—It is with some satisfaction that I am enabled to introduce, for the first time, this beautiful genus into our Materia Medica: all the species are equally medical; they have long been known to the Indians, who called them Mocasin flower, and were used by the Empirics of New England, particularly Samuel Thompson. Their properties however have been tested and confirmed by Dr. Hales of Troy, Dr. Tully of Albany, &c. The most efficient is the *C. luteum*, next *C. acaule*, and last *C. spectabile* and *C. candidum*. Neither Schoepf nor any other medical writer has mentioned them.

They are sedative, nervine, antispasmodic, &c. and the best American substitute for Valerian in almost all cases. They produce beneficial effects in all nervous diseases and hysterical affections, by allaying pain, quieting the nerves and promoting sleep. They are also used in hemicrania, epilepsy, tremors, nervous fevers, &c. They are preferable to Opium in many cases, having no baneful nor narcotic effects. The dose is a tea spoonful of the powder, diluted in sugar water, or any other convenient form. As in Valerian, the nervine power is increased by combination with mild tonics. The powder alone has been used; but an extract might be also efficient, unless the active principle is very volatile.

It is well known that the roots of all the tubercular Orchideous, afford the officinal Salep, which is so highly esteemed in Asia as aphrodisiac, nutritive and pectoral. The roots of many species of Orchis could afford it in America. The *Cypripedium* having long fleshy roots appear to afford a different kind of substance, by their efficiency as equivalents to Valerian and Opium.

Substitutes—All the species of this fine genus being equally nervine, it will be well to notice them, so as to be easily known.

1. *C. acaule* or Red Ladies' Slipper, Dwarf Umbil, &c.—Two radical leaves, one large red flower on a naked stem. Common in New Jersey, and on the alluvial plains of the Atlantic States. Best substitute. Roots smaller and brownish. There is a bad figure of it in W. Barton's Am. Flora.

2. *C. spectabile,* or Red and White Ladies' Slipper, Female Nervine, &c.—Stem leafy, one or two flowers white and rose colored, sepals oval and short —Rare from New York to Louisiana.

3. *C. candidum,* or White Ladies' Slipper, White Umbil, &c.—Stem leafy, flower white, sepals longer than the labellum—Rare in deep woods, Pennsylvania to Ohio.

The other succedanea may be *Valeriana officinalis —Humulus lupulus* or hops—*Ulmus fulva—Arnica Montana—Doronicum sp.—Cunila mariana—Inula helenium,* &c.

Remarks—The Orchideous plants which have long roots like the *Cypripedium,* appear to have different properties from those which have round or oval tubercles. The *Goodyera* is antiscrofulous.

The Genus *Cladorhiza* or *Corallorhiza,* which has fleshy branched roots, has also active properties, &c. The *Habenaria fimbriata* has anthelmintic roots, and the *Hab orbiculata* is one of the Heal-alls or common Vulneraries.

All the bulbs of our tubercular Orchideous are more or less like Salep, Aphrodisiac and Uterine. But one of them the *Aplectrum hyemale,* (called formerly *Cymbidium* and *Corallorhiza* by other Botanists,) commonly known by the vulgar name of Adam and Eve, furnishes a kind of Glue, and has active properties. A species of the same genus *Aplectrum lutescens* which grows in the Western States, is said to be a powerful Uterine, employed by the Indian Women to procure abortion.

No. 31.

DATURA STRAMONIUM.

English Name—COMMON THORN APPLE.
French Name—Stramoine vulgaire.
German Name—Gemeine Stechapfel.
Officinal Name—Stramonium.
Vulgar Names—Jamestownweed, Jimson, Stinkweed, &c.
Authorities—Linn. and all botanical writers, Schoepf, Stoerck, B. Barton, Marcet, Hufeland, Woodville, Fisher, Cullen, Murray, Chapman, Archer, Thatcher, Coxe, A. Ives, Bigelow, fig. 1. & Seq.

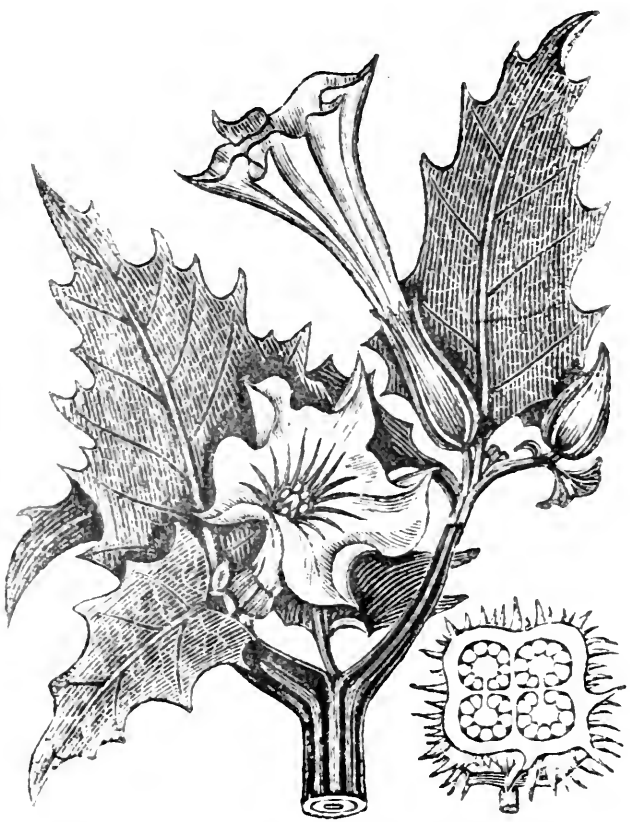
Genus Datura—Calix tubular, angular, deciduous, five toothed, Corolla funnel-shaped, plaited, five toothed: stamina five equal. Pistil one, style filiform, stigma bilobe. Capsule four celled, four valved, many seeded.

Species D. Stramonium—Stem dichotome; leaves alterne oval, sinuate-angular, acute, smooth: flowers solitary, capsuls erect, ovate, thorny.

DESCRIPTION—Root annual, white, crooked. Stem erect, from one to eight feet high, branched by forks or dichotome, cylindrical, often hollow, smooth or pubescent. Leaves alternate at the forks, petiolate, oval or oval-oblong, base decurrent, end acute, margin almost angular by large unequal acute teeth, sinuses rounded, and irregular.—Flowers axillary solitary, on short peduncles, erect, or sometimes

No. 31.

DATURA STRAMONIUM.



COMMON THORNAPPLE.

nodding, large, white or blueish. Calix monophylle, tubular, with five angles and teeth, deciduous, but leaving a rim at the base. Corolla twice as long, monopetalous, base tubular, subangular, limb with five angles, plaits and teeth, these last are acuminate. Stamina five, filaments coherent with the tube, filiform, equal, anthers oblong erect. Germen central, free, but the base concrete with the persistent rim of the calix, oval, hairy; one style filiform, as long as the stamina, one stigma bilobe at the base or subreniform. Fruit a large fleshy capsule, ovate, thorny, with four valves opening at the top, inside with four cells. Many black seeds filling each cell, and attached to a central receptacle in each cell, shape reniform.

HISTORY—The Genus *Datura* belongs to the LURIDES of Linnæus or SOLANEA of Jussieu; but ought to be the type of a peculiar family DATURINES, hardly different from the CONVOLVULIDES, except by having equal stamina. It is one of the numerous genera of the linnean *Pentandria monogynia*.

Some obscurity appear to exist on this species and several others, owing to mistakes of the best botanists. Linnæus blended the *Datura tatula* of Africa, with a variety of *D. Stramonium*, and the *D. metel* hardly differs from both. Individual varieties answering to these three species, are found in the United States; but they have all the same properties, as well as the *D. fastuosa* and *D. ferox* of the East Indies. The following varieties are common with us, and are linked by imperceptible changes.

1. Var. *Tatuloides.* Stem purple dotted with green, leaves subtruncate at the base, flowers purplish. This is the *D. tatula* of some botanists, but not the real one of South Africa and Asia.

2. Var. *Cordata.* Leaves cordate at the base, stem green, flowers pale bluish.

3. Var. *Angustifolia.* Leaves oblong-lanceolate, sinuate, flowers pale bluish.

4. Var. *Physaloides.* Leaves oblique at the base, viscid, flowers white.

5. Var. *Meteloides.* Stem viscid, tall, leaves subcordate pubescent viscid, flowers white, nodding.—This is the *D. metel* of some Botanists, but not the true kind of Africa, which has globose capsuls, and leaves nearly entire.

6. Var. *Alba.* Stem green without dots, flowers pure white.

This plant has handsome flowers, sometimes four inches long, with leaves from three to seven inches long, of a lurid aspect. It has been formerly cultivated for its beautiful blossoms, although they have a lurid smell. Children use them as yet for garlands, by forming strings of the flowers within each other. Notwithstanding its noxious qualities, I have seen Cows, Sheep and Goats browze on the leaves.

It blossoms from May to September, in the Southern States, and in the Northern from July to October, bearing yet blossoms when the seeds of the first flowers are ripe. It is killed by the frost with us; but in warmer climates becomes a half biennial plant.

The whole plant is a narcotic poison, producing

many strange effects on the human system, according to the doses and constitutions. The leaves eaten boiled, have occasioned delirium and intoxication for many days, without producing death, or else madness or tetanus and death. The Antidotes of this poison are emetics, vegetable acids, and strong coffee.

The vulgar name of Jimson is a corruption from Jamestown; as it is said to have spread from the town of that name in Virginia.

Locality—One of the erratic or wandering plants, common to all the parts of the world, and spreading with the utmost facility. It is probably a native of Persia and India; but has spread to Europe, Africa and America. It was once thought to be a native of North America; but it has spread in it only since its colonization: the Indians call it the White people's plant. Its migrations and colonies might be traced from Virginia, and New England. In the Western States it has sprung only since their late settlement, and from seeds carried there as a pretty garden plant. It is now become a noxious weed, infesting the fields, &c.; but as it is annual, it might easily be destroyed by pulling it before seed time. It is commonly met with near houses, along the roads, in commons, old fields, &c., never in woods nor mountains, and is found in all the States; also in Canada, and beyond Louisiana to Mexico, and even to Peru in South America.

Qualities—The whole plant has a fetid, lurid and narcotic smell, causing head ache and stupor; it has a bitter and nauseous taste. It contains gum, resin,

carbonate of ammonia, nitrate of potash, malic acid, and a peculiar alkaline principle called *Daturin*, to which most of its activity is ascribed. Daturin cristalizes in quadrangular prisms, and is only soluble in boiling alcohol: yet the plant yields its properties to Water and Alcohol, because the Daturin is combined with the acid and forms a soluble mallate of Daturin.

PROPERTIES—This loathsome weed is one of those bounties of nature scattered almost every where, and possessing energetic medical powers. It is narcotic, phantastic, antispasmodic, anti-epileptic, anodyne, sedative, &c. and externally refrigerant, detergent, resolvent, &c. It has been recommended by Physicians in Asia, Europe and America, in Epilepsy, rheumatic pains, tic douleureux, Gout and all kinds of pains, Mania, Convulsions, Asthma, Chorea, Sciatica, &c., and externally for burnings, scaldings, tumors, ulcers, cancer and piles. It is now a common article of Materia Medica every where; but it fails sometimes and requires care in the exhibition, owing to its noxious qualities when taken internally in too great quantity. It produces then Vertigo, confusion of mind, dilatation of the pupil, loss of sight, head ache, tremors of the limbs, loss of motion, dry throat, nausea, anxiety, faintness, delirium, convulsions, lethargy and death. Vinegar neutralizes the Daturin, as well as all vegetable acids; but an emetic is always serviceable when poisoned by narcotics.

The effects of this narcotic when administered internally for medical purposes, and in proper doses, is

to lessen sensibility and pain, to cause a kind of nervous shock attended with some nausea, a feeling of intoxication and suffocation, to have little influence on the pulse, to relax the bowels, to dilate the eyes, &c., followed by a sensation of ease and quiet, which induces sleep.

It has been too much extolled by some writers; but the results of the numerous cases in which it has been given, are as follows:—In asthma, it is only a palliative, useful in the paroxysms, but useless in plethoric cases, it is commonly smoked like Tobacco, a practice likely to be attended with some danger, and suitable only for smokers. In Mania it is of little use except in some cases difficult to be ascertained; but in Epilepsy and Convulsions it cures the periodical fits, while it avails not in the sudden fits. It is highly serviceable in Chronic acute diseases, such as Sciatica, Syphilitic pains, disease of the spine, paraplegia, Cancer of the breast, uterine pains, rheumatism, &c., also in chorea and dysmenorhea, strangury and Calculus, acting in all those cases as an antispasmodic. In tic douleureux it has only afforded relief in some cases, and has required repeated doses, but it has failed in others.

Externally it is a safer and certain remedy for burns, tumors, gout, ulcers, inflammations and some cutaneous eruptions. The leaves or their ointment are applied to the parts, they promote the granulations or cicatrization of the worse ulcers, and afford speedy relief in piles and painful hemorrhoidal tumors. Surgeons use them topically to enlarge the pupil of the

eye previous to the operation of Cataract. It is said that the leaves applied to the head, produce sleep and dreams. The plant may be gathered for use at any time; but it is best when in blossom. All the parts of the plant are efficient even the root; but the seeds contain more Daturin, and are preferable in some instances.

Many preparations are made for internal use; but the distilled water is nearly inert. The powdered leaves, juice, extract, decoction, tincture, &c. are all available; for external use an ointment is made by simmering one pound of fresh leaves in three pounds of lard. The doses for internal use are to be very small. Dr. Bigelow recommends the following: one grain of dry powdered leaves or extract, half a grain of powdered seeds, one quarter of a grain of extract from the seeds, and from 15 to 20 drops of the tincture. Marcet and others say that even one-eighth of a grain is a sufficient dose to begin with. One pound of seeds afford two ounces of extract, and one pound of leaves three ounces.

Substitutes—*Hyosciamus niger—Conium maculatum—Lactuca elongata—Solanum Virginicum* and *S. dulcamara—Cypripedium* Sp—Opium and other active narcotics or sedatives.

No. 32.

DIOSPYROS VIRGINIANA.

PERSIMON TREE.

No. 32.

DIOSPYROS VIRGINIANA.

English Name—PERSIMON TREE.
French Name—Plaqueminier.
German Name—Persimon Baum.
Officinal Name—Diospyros.
Vulgar Names—Persimons, Yellow Plums, Winter Plums, Guaiacan, Seeded Plums, Pishmin, &c.
Authorities—Lin. Mich. Fl. and Sylva, Pursh, Eaton, Torrey, Elliott, Schoepf, Kalm, Catesby, Woodhouse, Coxe, Brickell, Zollickoffer, &c.

Genus Diospyros—Diclinous, Calix 4 to 8 cleft. Corolla rotate or urceolate 4 to 8 cleft. Staminate flowers with 8 to 20 Stam. filaments free with one or two anthers. Pistilate flowers with one Pistil, a short style and 4 to 6 stigmas. Berry with 8 to 12 seeds.—Trees with alternate leaves.

Species D. Virginiana—Leaves ovate oblong, acuminate, entire, smooth, pale and reticulate beneath, petiolate, petiols pubescent; Berries solitary globose.

DESCRIPTION—The Persimon is a common tree rising from 15 to 60 feet, with a smooth bark, and spreading branches. The leaves are from three to five inches long, shining above, whitish or pale and reticulate beneath, oval or oblong, base acute, end or tip acuminate, margin entire, on short alternate and pubescent petioles. These leaves vary in

size, and some varieties have them glaucous or pubescent beneath. Buds smooth.

Flowers lateral, extra axillary, solitary, nearly sessile or on a short pedicel. Calix spreading persistent, commonly 4 cleft, seldom 5 or 6 cleft, segments oval acute shorter than the Corolla, which is yellowish, with as many segments as the calix, broad ovate, acute. Diclinous blossoms on separate trees or dioical, sometimes a complete flower occurs, in which are as many stigmas as segments to the Calix, and double the number of Stamina. The filaments are short, free or inserted on the calix instead of the corolla, depressed, anthers bilobe. One Pistil, germen round, style very short, stigmas obtuse, spreading.—Fruit a globular yellow berry, similar to a plum, with a thin skin, fleshy pulp and many compressed hard seeds.

HISTORY—This genus amply evinces the absurdity of the Linnean system, since hardly two species of it have the same number of stamina. Linnæus put it in his class *Polygamia;* it is now put in *Dioecia octandria,* although many species have 10 or 12 or 16 or 20 Stamina, and 2, 3, 4, 5 or 6 Styles or Stigmas. It however belongs to a very natural family the Ebenaceous. The whole genus appears to need reform, and ought to be divided in many Sub Genera or Genera, such as

Diospyros to which *D. Lotus, Virginiana,* &c. belong.

Embriopteris (Gaertner) 20 stam. One cruciate stigma.

Ebenum. Cal. 5 Segm. Stam. 10. Berry 10 locular.

Dimia, with 2 or 3 Styles, type *D. digyna.*

Chloroxylon, type D. ditto.

Gonopyros, Cal. and Cor. 5 fid. Berry angular or lobed.

The *D. Virginiana* is by no means a definite species. Pursh and Michaux, jun. have noticed that two species are probably blended under that name: to one of them Pursh gave the name of *D. pubescens.* I have ascertained three principal varieties at least, (and there are more) which might almost be deemed specific; they are

1. Var. *Macrocarpa.* Leaves smaller, glauceous beneath, fruit very large—Southern States.

2. Var. *Concolor.* Leaves middle size, hardly pale beneath, somewhat obtuse, fruit of a good size.

3. Var. *Microcarpa.* Leaves large acute, pubescent beneath, fruit very small.—Virginia, &c. This is the *D. pubescens* of Pursh, who says that the leaves are tomentose beneath, petioles longer, &c.

The blossoms are of a pale yellow or orange color, they appear in May and June, when the leaves are yet small and not quite unfolded. The berries are only ripe late in the fall, and after frost; they resemble a yellow plum, but are globular: before their maturity they are exceedingly acerb and astringent; but when fully ripe and soft, become sweet, and have a fine flavor. These berries were one of the spontaneous fruits used by the native Tribes; who preserved them in various ways, dried them and made a paste with them: also a kind of Beer or Wine: this

liquor contains alcohol, which has been attempted to be extracted; but too many substances afford it already.

A gum exudes sometimes from the tree, but in small quantity. The Persimon Beer is made by forming the fruits into cakes with bran, drying them in an oven, and bruising these cakes afterwards in water. The large variety has fruits as big as an egg, and deserves to be cultivated on a large scale as a fruit tree. The wood is hard and fine, suitable for tools and many other domestic articles. To make Persimon Wine the skin of the ripe fruits ought to be taken off, as it contains too much astringency.

Locality—From New York to Louisiana, rare beyond the 42d degree of latitute, common in the South, in woods and groves; more common in the plains than the mountains.

Qualities—Bark bitter and acerb, containing Tannin, Extractive, &c. Fruit sweet and well flavoured when ripe, containing sugar, mucilage, gallic acid and several other substances.

PROPERTIES—Bark astringent, styptic, tonic, corroborant, antiseptic, &c. Ripe fruits subastringent, nutrient, antiseptic, anthelmintic, &c. The inner bark is the most officinal part: it is extremely bitter, and a good astringent tonic, useful in sore throat, fevers, intermittents, and Dysentery. In this last disorder it is often united with rhubarb. It is much used in Carolina and Tennessee for intermittent fevers. It is also a powerful antiseptic, and equal to the *Cinchona:* Some physicians consider

it, as well as its equivalent the *Sorbus Americana* as the best succedanea to *Cinchona*. It has been useful in ulcers, and ulcerous sorethroat. The doses are the same as common tonics either in substance or extract. It has not yet been analysed; but probably contains a peculiar principle, Diospyrine, which is by far more astringent than Cornine or even Quinine, owing to its union to the gallic acid.

In the South of Europe the *Diospyros Lotus*, which is very much like the Var. *microcarpa*, is called holy wood, and employed as a substitute for Guayac wood. This may perhaps possess similar properties.

The unripe fruit has nearly the same properties as the bark; but is too austere and very styptic. The ripe fruit is very palatable, sweet and vinous; it has been used to kill the worms of children.

Substitutes—*Sorbus Americana*—*Prunus Virginiana*—*Quercus rubra*—*Spirea tomentosa*—*Pinckneya bracteata*—*Cinchona* Sp. and most of the Astringent Tonics.

Remarks—The Persimons, Wild Grapes, Papaws (*Asimina*) Hickorynuts, Pecans, Walnuts, Chesnuts, Chincapins, Filberts, Whortleberries, Cranberries, Strawberries, Mulberries, Raspberries, Blackberries, Crab Apples, Wild Plums, &c. were the fruits of the native tribes. Several have been introduced already in our gardens; but the Persimon has not yet been cultivated, although no fruit deserves it better: it promises to improve in flavor and size under the care of the gardener, affording a fine table fruit, many preserves, and a peculiar kind of wine.

No. 33.

DIRCA PALUSTRIS.

English Name—SWAMP LEATHERWOOD.
French Name—Dircier triflore.
German Name—Leder-holz.
Officinal Name—Dirca.
Vulgar Names——Leatherwood, Moosewood, Swampwood, Ropebark, (Bois de plomb in Canada.)
Authorities—Linnæus, Pursh, Kalm, Bartram, Duhamel, fig. 212. Torrey, Eaton, Elliott, Locke, B. Barton, Zollickoffer, Bigelow, fig. 37, &c.

Genus Dirca—Perigone simple, colored or corolliform, tubular, funnelshaped, nearly entire, sub-eight toothed. Stamina eight perigynous, exserted, four alternate longer. Germen free oval, style lateral. Berry one seeded.

Species *D. palustris*—Shrubby, branches articulated; leaves alternate, subsessile, oval, entire; peduncles triflore drooping.

DESCRIPTION—Shrub, from three to seven feet high, with branches spreading, cylindric, flexuose articulate, green, smooth. Leaves alternate or scattered, distichal, nearly sessile, petioles very short; shape oval entire, acute at both ends, downy when young, smooth and membranous when full grown, pale beneath, unfolding after the flowers.

No. 33.

DIRCA PALUSTRIS.

SWAMP LEATHERWOOD.

Flowers blossoming early and before the leaves come out, forming in the fall within terminal buds, where they hybernate, buds with many oblong hairy scales, and three flowers. Peduncle bearing a fascicle of three flowers, formed by three cohering pedicels. Each flower yellow, half an inch long, with a simple perigone, called Corolla by Linnæus because it is colored: this perigone is drooping, tubular, contracted at the base and middle, campanulate at the end, with eight obscure teeth on the margin. Eight Stamina inserted on the perigone, with slender filaments, longer than the perigone, and alternately longer and shorter, anthers rounded. Germen oval, central free, with a long filiform curved style inserted on one side of the base, Stigma acute. Fruit a small orange berry, oval, acute, with a single seed.

HISTORY—One of the few American genera containing as yet a single species. It is a very distinct genus belonging to the natural family of DAPHNIDES, called *Thymelea* by Jussieu and *Vepreculæ* by Linnæus, and also to *Octandria monogynia* of his sexual system. The specific name *palustris* implies that it grows in swamps; but it is oftener found on the banks of rivers and even among rocks.

The blossoms are scentless and appear very early in the Spring, as soon as the Maples blossoms, long before the leaves are unfolded. The bark is very tough, can hardly be broken, and tearing in long stripes is used as yet in many parts for ropes, a practice borrowed from the Indian tribes: the wood is also flexible.

The berries are poisonous, children must avoid

them: if eaten by mistake, an emetic must be resorted to.

Locality—From Maine and Canada to Georgia near streams, and in shady swamps, rare west of the Alleghany mountains, yet occuring in Ohio and Kentucky.

Qualities—The bark and root have a peculiar nauseous smell, and unpleasant acrimonious taste; they contain an acrid resin, bitterish extractive, mucilage, &c.: the resin or active principle, is only soluble in boiling alcohol. The decoction and extract are bitter, but not acrimonious.

PROPERTIES—Emetic, cathartic, rubefacient, epispastic, &c. and the berries narcotic. The fresh root and bark in substance at the dose of five to ten grains produce vomiting, with a sense of heat in the stomach, and sometimes act as a cathartic also. They are an active and dangerous medicine, to which less acrimonious substances ought to be preferred. Applied to the skin they produce rubefaction and vesication in thirty hours; this appears a more safe mode to use them, as they might become auxiliaries to the Spanish flies. The berries produce nausea, giddiness, stupor, dilatation of the pupil and insensibility like other narcotics. Bigelow considers this plant as a substitute for the *Polygala Senega;* but this last is by far better and safer, and therefore preferable. We are not told whether it acts like the *Polygala* and is expectorant, sudorific, &c. Upon the whole this shrub possesses such active properties as to deserve attention; but we do not possess as yet sufficient evi-

dence of its utility. When the bark is chewed it produces salivation, it is so tough that it cannot be reduced to powder, but forms only a kind of lint. The watery preparations are nearly inert.

Substitutes—All the milder emetics and acrid substances, Cantharides—*Baptisia tinctoria*—*Conium maculatum*—*Polygala senega*—*Apocynum androsemifolium*—*Eupatorium perfoliatum*—*Ranunculus* sp.—*Euphorbia corollata* and *E. Ipecacuana*—*Rhus* Sp.—*Clematis* Sp. &c.

Remarks—Our native epispastics are little known as yet, and deserve attention. The *Juglans Cinerea* and the Oil of Sassafras are with the *Dirca* most likely to become practically useful.

We have also in the United States, several species of Cantharides, such as *Cantharis Vittata. C. marginata, C. atrata, C. cinerea,* &c. which are equal to the officinal Spanish flies, and would be available if not so scarce.

No. 34.

ERIGERON PHILADELPHICUM.

English Name—SKEVISH FLEABANE.
French Name—Erigeron de Philadelphie.
German Name—Skewisch Berusungskraut.
Vulgar Names—Skevish, Scabish, Sweet Scabious, Daisy, Cocash, Frostweed, Fieldweed, Squawweed, &c.
Authorities—Linn. Mich. Pursh, Pers. Torrey, Eaton, B. Barton, Depuy, Hales, A. Ives, Bigelow Seq. Thatcher, Coxe. W. Bart. fig. 20.

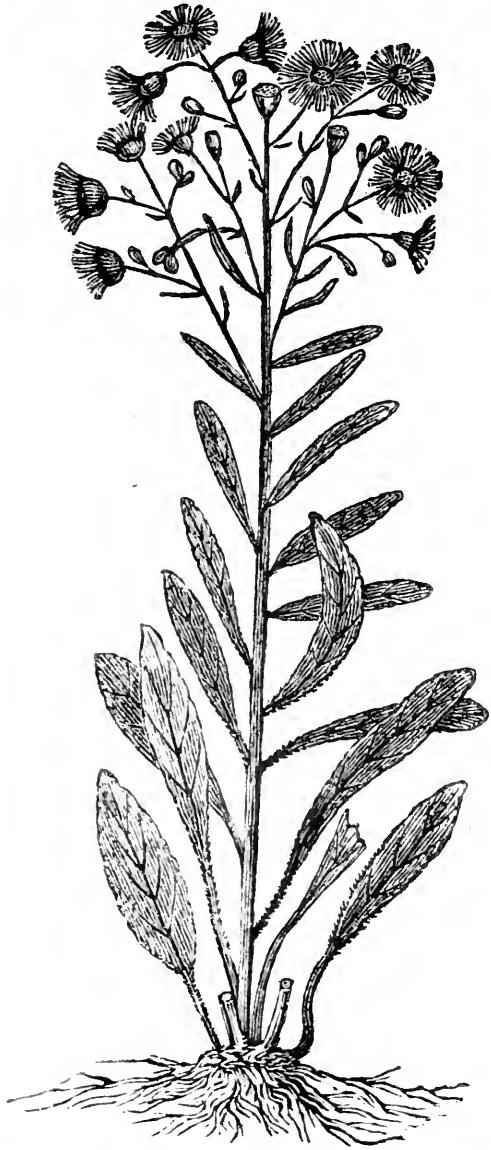
Genus Erigeron—Flowers compound radiate. Perianthe imbricated, folioles subulate unequal. Phoranthe naked. Rays ligulate, linear, entire, numerous, pistillate; central flowers of the disk tubular complete or staminate, five toothed. Seeds oblong crowned by a simple pappus.

Species. E. Philadelphicum—Pubescent, leaves cuneate oblong obtuse, lower petiolate, upper semiamplexicaule, nearly entire subciliate: flowers corymbose, rays twice as long as the hemispherical perianthe.

DESCRIPTION—Roots perennial yellowish, formed by many branching thick fibres. The whole plant is pubescent and rises two or three feet, stems one to five, straight, simple, branched and corymbose at the top, a little angular. Radical and lower leaves

No. 34.

ERIGERON PHILADELPHICUM.



SKEVISH FLEABANE.

oblong, base cuneate decurrent on a long petiole, nearly obtuse, margin ciliate entire or seldom serrate: upper leaves sessile or nearly amplexicaule, cuneate, narrow oblong, obtuse, entire, alternate remote: floral leaves small lanceolate.

Flowers numerous forming a panicled Corymb, peduncles scattered, slender, bearing one to three flowers. Buds globular. Perianthe or common calix hemispherical, formed by many subulate, adpressed folioles. Flowers radiate, half an inch in diameter, with yellow disk and rays white, bluish or purplish. Rays or radial florets ligular numerous, spreading, crowding, narrow, entire, pistilate. Florets of the disk, convex, crowded, the central ones sometimes staminate and abortive. Phoranthe or common receptacle, bearing all the florets, flat, naked, pitted. Germen of the pistillate and complete florets oblong smooth, having a symphogyne calix forming above a pilose pappus which crowns the seeds. Each floret produces a single seed.

Locality—Found all over the United States, although bearing the name of Philadelphian. It grows in New England, New York, Ohio, Kentucky, Missouri, and as far South as Louisiana and Georgia. It is a field plant, seldom seen in woods and mountains; but covering sometimes whole fields, dry meadows, commons and glades. In old fields it is deemed a pernicious weed, like the other kinds which commonly accompany it.

HISTORY—Three species (if not more) of this genus have similar properties, and will therefore be included in this article, the other two are,

1. *Erigeron heterophyllum*, (Aster Annuus of Linnæus) Jagged Fleabane, which merely differs from this by broader jagged difforme leaves, the radical and inferior ovate, sinuate dentate, acute, the upper one lanceolate subpinnatif, and the floral entire —Common in meadows, &c., mixed with *E. philadelphicum*. Figured by W. Barton, fig. 21. Biennual.

2. *Erigeron Canadense*, Canada Fleabane. It has linear crowded entire leaves; flowers paniculate, very small, with oblong perianthe and rays exceedingly short. One of the most common weeds from Canada to Kentucky, and yet perhaps the most efficient of the three. It infests old fields, and has been spread in Europe by chance. Very variable, principal varieties 1. *Uniflorum*, 2. *Pusillum*, 3. *Maritimum*, 4. *Virgatum*, 5. *Serratum*, 6. *Lanceolatum*, &c.

A multitude of vulgar names are applied to these plants. Fleabane is the true English name, Daisy alludes to the flowers which are similar to those of the true Daisy or *Bellis perennis*, but the *Bellis integrifolia* is the true American Daisy. Scabious is erroneous, since they are nothing like the genus *Scabiosa*, Skevish derives perhaps from Scabious or from Cocash the Indian name.

They all blossom from July to October, or until frost. They are deemed bad weeds; but are easily extirpated. The *E. canadensis* is annual.

Erigeron is a genus of the RADIATE Order next to *Aster*, of which it merely differs by numerous narrow rays. Both belong to *Syngenesia Superflua* of Linnæus.

QUALITIES—These plants have a peculiar smell most unfolded by rubbing them, which is not disagreeable. Their taste is astringent, acrimonious and bitter: the smell and taste are most unfolded in *E. canadense* and *E. philadelphicum.* They contain Tannin, Amarine, Extractive, Gallic Acid and an essential Oil. This Oil is very peculiar, as fluid as Water, of a pale yellow color, a peculiar smell somewhat like Lemon, but stronger and a very acrid taste. It holds probably in solution Acrine or a peculiar substance *Erigerine.*

PROPERTIES—These Weeds are valuable medicaments, possessing very active powers; they are Diuretic, Sudorific, Astringent, Styptic, Menagogue, Pectoral and Tonic in a high degree, and act in a mode peculiar to themselves, by means of their acrid quality. Their Oil is so powerful that two or three drops dissolved in Alcohol, have arrested suddenly uterine hemorrhagy, in the hands of Dr. Hales of Troy, who employs the Oil of *E. canadense.* This kind is most used in New England and New York, the others in Pennsylvania and New Jersey. The whole plants are available.

The Diseases already relieved or cured by these plants are Chronic Diarrhœa, Ascites, Disury, Nephritis, Gravel, Gout, Anasarca, Suppressed Menstruations, Dropsy, Hydrothorax, Dry Coughs, Cutaneous Eruptions, Hemorrhagies, Dimness, Rash, Cold hands and feet, &c. The whole plants are used fresh or dried, in infusion, decoction or tincture. Their extract is rather fetid, more astringent than the infusion

or tincture; but less than the Oil, which is one of the most efficient vegetable Styptics. This extract and a syrup of the plant have been given usefully in dry coughs, hemoptysis, and internal hemorrhages. The dose is from five to ten grains of the extract, often repeated.

As diuretic the infusion, decoction and tincture are preferable and more active; they have increased the daily evacuation of urine from 24 to 67 ounces. A pint or two of the former may be taken daily; they agree well with the stomach, even when Squill and Digitalis are intolerable: the dose of the tincture is from two to four drachms daily; it is made by digesting one ounce of the leaves in a pound of proof Spirit. They are beneficial in all diseases of the bladder and kidneys, attended with pain and irritation, in which they give speedy relief. Also in all compound cases of gravel and gout. In rheumatism they have not been tried, although they are sudorific. In all Dropsical disorders they act as diuretic. In chronic Diarrhœa as astringent and have cured it without auxiliary.

They are even useful externally in wounds, also in hard tumors and buboes, which a cataplasm of the fresh plants dissolve as it were. But the most valuable property is the astringent and styptic power of the Oil, which has saved many lives in parturition and uterine hemorrhagy. A saturated solution of the Oil in Alcohol is applied and a little given in a spoonful of Water; and an instantaneous stop takes place in the bloody flow.

Since these plants appear to increase as well as to prevent several discharges from the body, they must not act as other diuretic and astringent remedies; but by a peculiar acrid effect on the system, worthy of investigation. I highly recommend these plants to medical attention. They were known to the Northern Indians by the name of Cocash or Squaw-weed as menagogue and diuretics, and are often employed by Herbalists. They may be collected for medical use at any time when in blossom.

Substitutes—*Eryngium yucefolium* and *Aquaticum*, or Corn-snake root, said to be the strongest diuretic and sudorific of the Southern States—*Botrophis Serpentaria*—*Pyrola umbellata, maculata*, &c.—*Daucus Carota* and other diuretics.—For astringents *Spirea tomentosa*—*Heuchera Sp.*—*Statice Caroliniana*—*Arbutus Uva Ursa*—*Geranium maculatum*—*Comptonia asplenifolia*, &c.

Remarks—Other species of this genus may possess the same properties: they are very similar to each other. The following might be tried.

E. bellidifolium or Daisy Fleabane, a vernal kind.

E, Integrifolium, or Slender Fleabane.

E. purpureum, or Purple Fleabane.

E. strigosum, or Rough Fleabane, &c.

No. 35.

ERYTHRONIUM FLAVUM.

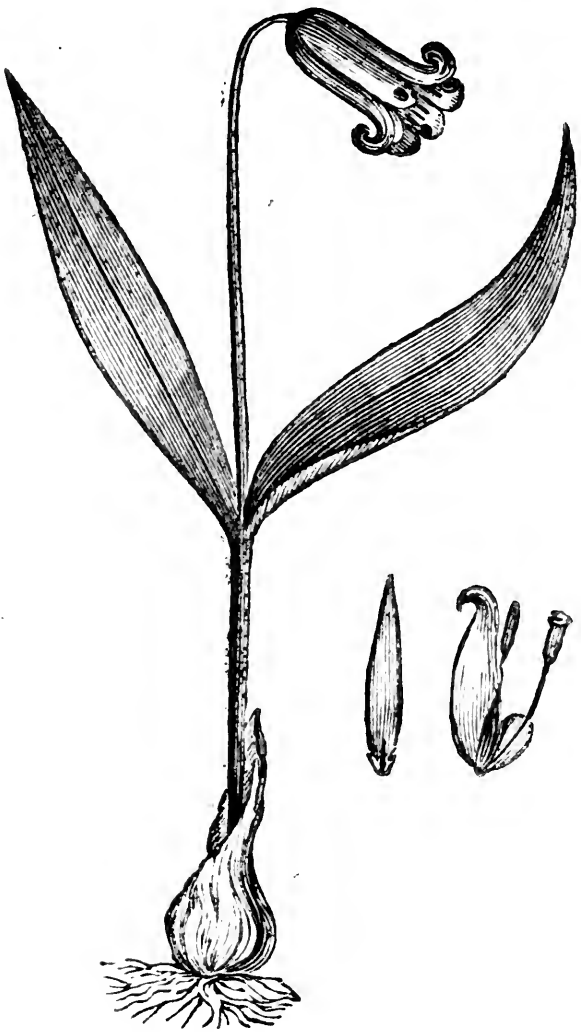
English Name—YELLOW SNAKELEAF.
French Name—Dent-de-Chien Jaune.
German Name—Gelb Hundzahn.
Officinal Name—Erythronium.
Vulgar Names—Yellow Adder's tongue, Adder-leaf, Dog-Violet, Rattle Snake violet, Lamb's tongue, Scrofula root, Yellow Snow drop, &c.
Synonyms—*E. flavum* Smith. *E. americanum* Ker, Nuttal, Torrey, &c. *E. dens-canis* Mich. Eaton, &c. *E. lanceolatum* Pursh. *E. longifolium* Poiret.
Authorities—Michaux, Pursh, Smith, Nuttal, Elliott, Torrey, Bigelow, fig. 58, and Sequel, W. Barton, flora fig. 33, Coxe, Zollickoffer, &c.

Genus Erythronium—Perigone corolliform, with six deciduous colored sepals, subequal, campanulate; the three inner ones with a fossule at the base. Stamina six subequal, inserted at the base of each sepal. One pistil, germ turbinate, Style fistulose, Stigma clavate three lobed. Capsul obovate, three celled, three valved, with many ovate seeds.—Stem with two opposite leaves and one flower, root bulbous.

Species E. Flavum—Leaves subequal, subradical, lanceolate, mucronate, smooth, entire, flower nodding, sepals oblong-lanceolate, obtuse, the inner ones bi-

No. 35.

ERYTHRONIUM FLAVUM.



YELLOW SNAKELEAF.

dentate near the base: Stigma with three united lobes.

DESCRIPTION—Root perennial, a solid pyriform bulb, deep in the ground, white inside, covered outside with a brown loose tunic, sheathing the base of the Stem, fibres of the root inferior, thick and short. Stem partly under ground with two leaves appearing radical because near the ground, the whole plant smooth and shining; Stem white below, greenish purple above, slender cylindrical from five to twelve inches long, two sessile leaves: on the first year of the growth only one leaf is produced, and it is commonly broader and elliptic. Leaves a little unequal, one being commonly narrower or smaller, they are from three to seven inches long, lanceolate or oval-lanceolate, shining and glabrous, veinless and with a single nerve, often spotted by large irregular spots of a dull brown above, pale and unspotted below, and with an obtuse callous point.

A single flower at the end of the Stem, one inch long, nodding, of a yellow colour, sometimes with a mixture of red outside by a stripe or veins on the external sepals or petals, which are lanceolate reflected, sometimes acute, while the inner ones are oblong lanceolate, obtuse, quite yellow, veinless, with a callous notch on each side at the base, and a furrow in the middle above the fossule or little pitt of the base, above the Stamina, which are inserted quite at the base, shorter than the sepals, yellow, with depressed subulate filaments, and depressed linear anthers. Germ turbinate triangular, Style fistulose, Stigma clavate

prismatic trilobe above. The Capsul is naked, turbinate triangular, with three cells and many large oval seeds.

HISTORY—This pretty genus was long formed by a single species *E. dens-canis* growing in Europe and Asia, to which was referred this at first. Several species have since been discovered in America, and they afford many varieties, some of which may on further attention be deemed peculiar species. They all possess the same properties as well as a striking peculiar generic habit, somewhat similar to *Claytonia, Clintonia, Mayanthus, &c.* The Stem has been mistaken for a Scape by many, because it is partly subterraneous. When this species was distinguished from *E. dens-canis*, several names were given to it by Botanists nearly at the same time, I have chosen the best if not the oldest also, applying to its yellow flowers, while all the others have white flowers; the name of *Americanum* so often proposed, is become absurd now. The varieties of this yellow species which I have detected are,

1. Var. *Viperinum*, Leaves canaliculate with large reddish brown spots; external sepals acuminate, veined with red outside, all the sepals with small purplish dots inside, Stigma entire, trigone, pubescent. This is probably the kind figured by W. Barton.

2. Var. *Croceum*, Leaves narrow flat with small spots, flower drooping, external sepals partly red outside and obtuse, Stigma trilobe smooth. This is figured by Bigelow.

3. Var. *Bracteatum*, Leaves unequal, Stem with

a lanceolate bract, flower small. This is the *E. bracteatum* of Boott and Bigelow, from Vermont and the Alleghany; probably a peculiar species.

4. Var. *Lucidum*, Leaves unspotted, flat shining, oblong lanceolate, flowers quite yellow. This is figured here.

5. Var. *Glaucum*, Leaves unspotted glaucous, flower yellow with some red veins.

6. Var. *Latifolium*, Leaves broad oval or elliptic, flat, seldom spotted, flower yellow.

7. Var. *Grandiflorum*.

8. Var. *Parviflorum*, &c.

Many strange vulgar names have been given to these plants, the spotted kinds are called Snakeleaf, Adder's tongue or leaf, because compared to Snake's spots, while the unspotted kinds become Lamb's tongue. The *Goodyera* and *Hieracium Venosum* are also called Rattle Snake leaf and used as equivalents. Snow-drop alludes to its early blossoms, coming often through snow. In fact it is in the United States the representative of the *Galanthus nivalis* or true Snow-drop of Europe, blossoming in March and April, while snow is yet falling. The *E. albidum* is called White Snow-drop. They are both pretty vernal blossoms, deserving to be cultivated in gardens although scentless.

Erythronium is a generic name of Greek origin, applying to the red spots of the leaves. The genus belongs to the fine natural order of LILIACEA, near *Tulipa* and *Fritillaria*. It belongs to *Hexandria monogynia* of Linnæus.

Locality—It grows from New England to Ohio and south to Carolina; in the Western States it is often superseded by the *E. albidum*, which extends from New York to Missouri and Tennessee. They both grow in woods, and under the shade of trees, shrubs or plants.

Qualities—The whole plant, but particularly the root, contains fecula, mucilage, a resin, and some volatile principle rather acrid. When dry, the root is farinaceous and loses its unpleasant flavor.

PROPERTIES—The root or bulb and the leaves are emetic, emollient, suppurative and antiscrofulous when fresh, nutritive when dry. The plant appears to possess nearly the same properties as the bulbs of many Lilies; but with the addition of an acrid emetic effect, which is lost by drying, boiling, roasting, &c. The dose to produce the emesis is twenty-five grains of the fresh root, or forty of the recent dried root. As it loses its activity by keeping, it is an inconvenient and unsafe emetic. Bigelow proposes to try it as a substitute of *Colchicum:* although they belong to different Natural Orders. This plant promises better as an antiscrofulous, for which purpose it is employed as well as the *E. albidum* from New York to Kentucky, &c. the fresh roots and leaves are stewed with milk and applied to the scrofulous sores as a poultice, healing them speedily: this new medical property was first communicated to me by Dr. Crockatt. Many bulbs of Lilies have been used in the same way for sores, but the active acrid principle of this, may act beneficially on the

scrofulous sores. Bigelow mentions that even bulbs of Tulips and Daffodils have acted as emetics sometimes. The roots and leaves of this plant may be eaten after boiling, like those of *E. dens-canis;* but the broth is emetic and nauseous, while it is said that the *E. dens-canis* makes good broth in Siberia. Salep could be made of these roots by scalding them and drying them afterwards.

Substitutes—*Erythronium albidum* and *Goodyera pubescens* for Scrofula, Salep, Roots of Acrid Liliaceous plants, many Emetic roots, &c.

Remarks—The *E. albidum,* White Snakeleaf or Snow-drop, will be known by its bluish white blossoms, and trifid stigma. It offers as many varieties as the *E. flavum,* such as 1. *Cerulescens,* 2. *Candidum,* 3. *Maculatum,* 4. *Angustifolium,* 5. *Bracteatum,* 6. *Grandiflorum,* 7. *Parviflorum,* 8. *Clandestinum,* 9. *Glaucum,* &c. Found from New York to Missouri and Kentucky.

No. 36.

EUPATORIUM PERFOLIATUM.

English Name—BONESET.

French Name—Eupatoire percefeuille.

German Name——Durchwachsener Wasserdost.

Officinal Name—Eupatorium perfoliatum.

Vulgar Names—Thorough-wort, Boneset, Joepye, Teazel, Feverwort, Sweating-plant, Thoroughstem, Crosswort, Indian Sage, Agueweed, Thoroughwax, Vegetable Antimony.

Synonym—*E. connatum* Michaux.

Authorities—Lin. Mich. Pursh, Colden, Schoepf, Cutler, Stokes, B. Barton, Torrey, Eaton, Elliott, Thatcher, Coxe, Anderson, Guthrie, Burson, A. Ives, all the Dispens. and Mat. Med. Bigelow, fig. 2 and Sequel, W. Barton, fig. 37.

Genus Eupatorium—Flowers compound flosculose. Perianthe imbricate, unequal, oblong or cylindric. Phoranthe naked. Floscules five toothed, Style exserted bifid. Seeds oblong angular. Pappus subplumose.—Leaves commonly opposite or verticillate, flowers corymbose.

Species E. perfoliatum—Stem villose, cylindric; leaves opposite connate-perfoliate, oblong, tapering, acute, serrulate, rugose above, tomentose beneath: flowers with a dozen of floscules.

No. 36.

EUPATORIUM PERFOLIATUM.

BONESET.

DESCRIPTION—Root perennial, horizontal, crooked, with scanty fibres, and sending up many Stems, which are upright, simple at the base, branched above in a trichotome form, forming a depressed corymb; from two to five feet high, round, covered with flexuose hairs; the whole plant has a greyish green color, and even the flowers are of a dull white. Leaves opposite, decussate, connate at the base, or united to each other there, where broadest, and gradually tapering to a sharp point, from three to eight inches long, narrow oblong, rough above, woolly beneath, margin serrulate, upper leaves often sessile, not united.

Inflorescence in a dense depressed terminal Corymb formed by smaller fastigate corymbs, peduncles hairy, as well as the perianthe or common calix, each inclosing from twelve to fifteen floscules or florets, Scales lanceolate acute, florets tubulose white, five black anthers united into a tube. Seeds black, prismatic, oblong, base acute, pappus with scabrous hairs.

HISTORY—A very striking plant, easily recognized among all others, even when not in bloom, by its connate leaves, perforated by the Stem, as in the Teazel or *Dipsacus fullonum*. It belongs to a genus containing nearly one hundred species, all very different from this except the *E. sessilifolium* which is nearly alike, but has smooth Stems, leaves rounded at the base, not united nor tomentose, flowers whiter, whereby they will be easily distinguished.

One half of the Species grow in America, and many have medical properties; but this appears the most

efficient, and being also best known, deserves a preference, although several are useful substitutes in some cases. It is by no means a handsome plant, while many congeneric are quite elegant plants, introduced into many gardens, such are the *E. celestinum* with beautiful azure blossoms, common all along the western streams, and the *E. purpureum* with large purple flowers, on a stem five to eight feet high, with whorled leaves.

The genus belongs to the great Natural Order of Corymbose plants, family *Flosculose*, or to *Syngenesia Equalis* of Linnæus. It takes its name from Mithridates Eupator, an ancient eastern king; it was first given to the *E. cannabinum*, the Asiatic and European species, whose medical powers were made known by him; it is an emetic, purgative and alterative like this.

They are all autumnal plants: this blossoms from August to October.

Locality—Common in swamps, marshes, and near streams, from Maine to Florida, and from Ohio to Louisiana: where it appears to have been stationed by the benevolence of nature, wherever men are liable to local fevers. It is found also in Nova Scotia, Canada, Missouri, Arkansas, &c.

Qualities—The whole plant, roots, stems, leaves, and flowers are intensely bitter, but not astringent; they have a peculiar flavor and faint smell. They have been analized by Anderson, Bigelow and Laurence, and found to contain Extractive, Amarine, a gum, a resin, an acid similar to the gallic, Acetate of

lime, some azote and tannin, and lastly a peculiar substance *Eupatorine*, brown, bitter, resiniform, soluble in water and alcohol, forming sulfates, nitrates, &c.

PROPERTIES—A valuable sudorific, tonic, alterative, antiseptic, cathartic, emetic, febrifuge, corroborant, diuretic, astringent, deobstruent and stimulant. It was one of the most powerful remedies of the native tribes for fevers, &c. It has been introduced extensively into practice all over the country from New England to Alabama, and inserted in all our medical works, although writers differ as to the extent of its effects. It appears to be superior to *Anthemis nobilis* or Camomile as a sudorific tonic, and preferable to Barks in the treatment of the local autumnal fevers of the country, near Streams, Lakes and Marshes. I have seen them cured efficiently by it when other tonics failed. It acts somewhat like Antimony, without the danger attending the use of this mineral. The cold preparations are powerful tonics and do not produce emesis as an over-dose of the warm decoction. It acts powerfully on the skin and removes obstinate cutaneous diseases. It has cured the following disorders in many instances, Intermittent and remittent fevers; petechial or spotted fever, called also malignant or typhoid pleurisy; diseases of general debility, Ascites, Anasarca, Anorexia, and debility arising from intemperance; acute and chronic rheumatism; violent catarrhs; bilious and typhus fever, particularly low typhus, incident to marshy places, and attended with a hot and dry skin;

also influenza, the Lake fever similar to the yellow fever, and the yellow fever itself; ring-worms, and Tinea Capites, Dropsy, Gout and Syphilitic pains: dyspepsia and complaints of the Stomach, and Bites of Snakes.

This plant may be so managed as to act as a tonic, a sudorific, a laxative or an emetic, as required. No other tonic of equal activity can be exhibited in fevers, with less danger of increasing excitement or producing congestion: the only objection to its general use is its nauseous and disagreeable taste. In substance or cold decoction, and combined with aromatics it becomes very efficient in intermittents and dyspeptic disorders: it strengthens the viscera and restores tone to the system. The doses of the powder are from ten to twenty grains, the decoction and infusion from one to three ounces. No unpleasant effects follow the cold preparations.

Ample accounts of the beneficial effects of this plant, are to be found in all our medical Works. Burson says that in Anorexia consequent to drunkenness, a cold infusion has speedily restored the tone of the stomach. Zollickoffer extols it as an alterative remedy in tinea capites, united to cremor tartar and sugar, two spoonfuls given three times a-day. Thatcher says that the cold infusion cures bilious cholic with obstinate constipation, a tea-cup full every half hour producing a cathartic effect. The warm infusion causes a copious perspiration, and often becomes a safe and certain emetic. Chapman relates that it cured the kind of Influenza called Breakbone fever,

acting as a diaphoretic, whence its popular name of Boneset. The name of Joepye is given to it, and to *E. purpureum*, in New England from an Indian of that name, who cured typhus with it, by a copious perspiration. Eberle says that catarrhal fevers may be removed by drinking a weak infusion of it in going to bed. It is particularly useful in the Indigestion of old people: and may be used as an auxiliary to other tonics and emetics in all cases. The extract and syrup preserve all the properties, and are less disagreeable to the palate.

Substitutes—*Anthemis nobilis and Cotula—Matricaria Camomila—Marrubium Vulgare* or Common Horehound—*Asclepias tuberosa—Leptandra—Botrophis*—Yarrow, Tansey and Sassafras, &c. Besides the following species of the same Genus.

1. *E. teucrifolium* or Rough Boneset (Wild horehound, &c.) has rough sessile ovate leaves, with some teeth at the base, the flowers white with five florets. Common from New England to Georgia.—Milder, less bitter and disagreeable than the former, a larger dose may be given, chiefly used in the South, in bilious remittent fevers, when Barks are inadmissible, dose two or four ounces of the infusion made by one ounce in a quart of water.

2. *E. purpureum* or Purple Boneset (Joepye, Gravel root, &c.) Stem hollow, rough, five to six feet high, leaves whorled, four to five, petiolate, lanceolate, serrate, rugose: flowers purple, many florets.—In meadows and near streams from New England to Kentucky. It has the same properties as *E. perfoliatum*, has been used in fevers and gravel, &c.

3. *E. verticillatum* or Tall Boneset (Joepye, &c.) Stem solid, smooth, five to eight feet high, leaves whorled three to five, sessile, ovate-lanceolate, base attenuate, unequally serrate, smooth: flowers purplish with many florets—With *E. purpureum*, same properties often blended together.

4. *E. maculatum* or Spotted Boneset. Stem solid sulcate, spotted; leaves petiolate, ovate-lanceolate, pubescent beneath, four to five in a whorls—With the last, Stem four to five feet high.

5. *E. trifoliatum* or Wood Boneset. Stem solid, leaves petiolate, ternate, ovate, acuminate, serrate, punctate, rough.—In woods from New England to Kentucky, Stem three to four feet high.

6. *E. sessilifolium* or Bastard Boneset. Described above, common in dry and hilly grounds, while the *E. perfoliatum* is always found in damp and low grounds.

7. *E. urticefolium* or Deerwort Boneset. Leaves opposite, petiolate, ovate, serrate, similar to nettle leaves, flowers white, many floscules.—In woods, exceedingly common in the Western States, eaten by Deer.

8. *E. violaceum*, Violet Boneset. Leaves opposite, petiolate, cordate, toothed, undulate, pubescent. —In Louisiana, Alabama, &c. a beautiful species with fine blossoms of a violet color, deserving to be cultivated.

These and many others are much weaker than the three first.

No. 37.

EUPHORBIA COROLLATA.

BLOOMING SPURGE.

No. 37.

EUPHORBIA COROLLATA.

English Name—BLOOMING SPURGE.

French Name—Tithymale fleuri.

German Name—Blum Wolfsmilch.

Officinal Names—Ipecacuana, Euphorbia radix.

Vulgar Names—Milkweed, Ipecacuana, Picac, Hippo, Ipecac, Persely, Milk-purslain, White-pursely, Indian Physic, Purge-root, Emetic-root, Bowman-root, Apple-root, Snake's milk, and Peheca in Louisiana.

Authorities—Lin. Clayton, Schoepf, Michaux, Pursh, Torrey, M'Keen, Zollickoffer, A. Ives, B. Barton, Coxe, W. Bart. Eberle, Bigelow, fig. 53, and Seq.

Genus Euphorbia—Monoical. Perianthe persistent caliciform, ventricose, alternate Segments petaloid. Staminate flowers eight to sixteen in the Involucre, naked, each has one bilobe anther with a filament articulated to a pedicel. Pistilate flowers solitary central, stipitate, one germ, three bifid styles. Capsul stipitate, three celled, cells formed by the involved valves, one or two seeded.

Species E. Corollata—Stem simple erect; leaves scattered sessile, oblong-cuneate, obtuse, entire; umbel with five rays and leaves, rays trifid with two oblong

bracts; flowers pedicellate, rotate, five lobed, corolliform ; capsuls smooth.

DESCRIPTION—Root perennial, large, one inch thick, two feet long, yellowish. Several Stems from two to five feet high, simple, round, erect, often smooth. Leaves sessile, entire scattered, often crowded, oblong, obovate, cuneate or linear, flat or revolute, smooth or hairy. A large terminal umbel with five rays, and as many leaves in a whorl, similar to the stem leaves. Rays trifid and next dichotomous, each fork has two oblong bracts. Perianthe (mistaken for the Calix by Linnæus, &c.) large, rotate, white, with five rounded flat segments, looking like a corol. Five small inner segments (nectaries of Lin.) like obtuse projections at the base of the segments. A dozen of Stamina, evolving gradually, each is a true flower on a pedicel, with an articulate filament and a bilobe anther. Many perianthes without pistil, when existing it is central, stipitate, nodding, rounded, with three bifid Styles. Capsul three cocca or formed by three valves rolled in and making three cells, each with a seed convex outside, angular inside, where it is inserted.

Locality—From Canada to Florida and Louisiana, in dry soils, barren fields, among stones and rocks, also in glades, seldom in woods and never near waters, nor in rich alluvial soils.

HISTORY—As in the case of the *Erigeron* this article shall include three species, which have equivalent properties, the two others are

1. *E. Ipecacuana* Lin. Ipecacuana Spurge. Pe-

rennial, smooth, diffuse or procumbent, dichotome, articulated: leaves opposite, sessile, entire, variable, round, oboval, elliptic, oblong, lanceolate or linear: Flowers solitary at the forks, on long pedicels, perianthe small, campanulate five lobed: capsuls round and smooth.—Confined to the great Atlantic alluvial region extending from New Jersey to Florida and Mexico, along the Sea: very common there in sands and Pine woods. It blossoms from June to August, and affords a multitude of varieties, such as 1. *Cespitosa*, 2. *Prostrata*, 3. *Rotundifolia*, 4. *Lanceolata*, 5. *Uniflora*, &c. this last has only a single white flower, with procumbent stem, and obovate leaves. I described it in 1808, as a N. Sp. *E. uniflora*. 6. *Rubra*, the whole plant is red, 7. *Portulacoides* with erect stems and oval leaves, described by Linnæus as a peculiar species.—Root grey, white inside, very long. It is figured by Bigelow fig. 52 and by W. Barton, fig. 18.

2. *E. hypericifolio* Lin. (also *E. maculata* of Lin.) Black Spurge, (or Spotted Pursely, black Pursely, &c.) Annual, smooth, dichotome, erect or procumbent, divaricated: leaves opposite, petiolate, oblique, subfalcate, oblong, serrate, acute; flowers terminal fasciculate, perianthe four lobed and white, capsuls smooth.—Common all over the United States, in fields, &c. Several Varieties, 1. *Prostrata*, 2. *Multiflora*, 3. *Maculata* with a purple spot on each leaf. 4. *Simplex*, &c.

The varieties of *E. corollata* are 1. *Linearis* all the leaves linear obtuse. 2. *Pubescens*, Stems and

leaves pubescent. 3. *Rosea* flowers tinged with rose color. 4. *Pauciflora* only 5 or 6 flowers, &c. They all blossom in Summer, from June to September, and make a pretty appearance by their fine umbels of snowy blossoms: they are bad weeds in some fields, and all animals avoid them.

In these plants, we have quite efficient substitutes for the Brazilian Ipecacuana, *Calicocca*, which is often adulterated or old in our shops. We could even export them as true Equivalents of the officinal Ipecacuana. The *E. hypericifolia*, however, which is an annual plant is available as an herb, while the *E. Ipecacuana* has a large root from four to six feet long, which might be exported and afforded cheap. It is a singular coincidence that the name given to these roots by the Indians of Louisiana is *Peheca*, very similar to the Brazilian native name of *Ipeca*, both meaning Emetic-root. The *Psychotria emetica* and *Viola Ipecacuana* furnish also similar emetics.

The Genus *Euphorbia* has been named after Euphorbus, physician of Juba, king of Mauritania, who brought the Euphorbium or Juice of the *E. officinalis* into practice. It is a very extensive and anomalous genus, divided into many sections. *Esula*, *Tithymalus*, *Characias*, *Lathyras*, &c. It is the type of the Natural Order of Tricocca or Euphorbiaceous plants. Linnæus put it in *Dodecandria monogynia*, mistaking the perianthe for a Corolla, but it is now properly removed to *Monoecia monandria*. Most of the species are medical, more or less drastic and emetic, but difficult to manage, and in large

doses they bring on violent pains, heat and thirst, debility, cold sweats and even death. The *E. helioscopia* and a species akin to *E. peplus* grow also in the United States and have been used in Europe in small doses, as well as the *E. esula, dulcis, exigua, characias, palustris, cyparissias,* &c. Each has a peculiar mode of action, and the *E. officinalis* of Africa produces a blistering gum. They are all milky plants.

QUALITIES—These plants have been analysed by Barton, Bigelow and Zollickoffer; they contain mucilage, sugar, starch, Caoutchouc, Resin, an essential Oil, Tannin, and a peculiar principle similar to *Emeta*, which is soluble in Alcohol and colors it yellow, but insoluble in Water, forming oxalic Acid with Nitric Acid, it might be called *Oxalemis*. The analysis of the true Ipecacuana differs from this and gives Starch forty, Gum twenty, Wax six, Fibrine twenty, Oil two, Emetine or Acidified Emeta sixteen parts. The roots and leaves of these *Euphorbia* have a sweetish taste subastringent and not unpleasant, with a peculiar smell, when rubbed; but no nauseous taste nor smell: the milk is acrid.

PROPERTIES—Emetic, cathartic, diaphoretic, expectorant, astringent, rubefacient, blistering, and stimulant. These plants are highly recommended by some physicians as equivalent to the officinal Ipecac, which it is said they ought to supersede; but Bigelow contends that they are less mild and bland, and although equal or even stronger, are not so useful in all indications. They were formerly considered too

violent in their operation; but have since been found to be manageable and safe: the action is always proportionate to the quantity taken, which does not happen with common Ipecac. As a cathartic they have been found equal or better than Jalap or Scammony; requiring only half the dose, ten grains will commonly purge well, while twenty-five to thirty grains produce repeated evacuations from the stomach. Given in large doses they excite violent vomiting, attended with heat, vertigo, dizziness and debility. The *E. corollata* appears to be the most efficient since it purges at the dose of three to ten grains, and vomits at ten to twenty. But a diversity has been noticed in various constitutions, the same doses being sometimes inert, cathartic or emetic, or both in some instances; they often produce nausea even in small doses, and then act as diaphoretics like Ipecac, to which they are preferable by having no unpleasant taste, nor exciting pains and spasms.

The medical properties reside in the thick bark of the root, which forms two thirds of the whole root, and produces one twelfth of watery extract, and one tenth of alcoholic extract. They may be substituted to Ipecac in all the pharmaceutical preparations, wine, tincture, extract, &c.; the emetic dose of the wine is an ounce, of the extract three to five grains. When used as a diaphoretic and expectorant, the dose is three or four grains of the powder: it may be combined with opium or antimonials. The bruised root applied to the skin, produces vesication in about twelve hours, which lasts two or three days; this property

has not yet been applied to practical use; but might be equivalent to that of the officinal Euphorbium used by farriers. The milk of all the species of this genus destroy Warts and cure Herpes, they may afford a kind of black Varnish, or Gum Elastic. The other diseases in which these plants have been occasionally employed are Dropsy, asthma, also hooping cough and fevers, but we have no great evidence of their success, except in Asthma when they act as pectoral sudorifics.

The *E. hypericifolia* appears to differ in its effects from the two others, it is an annual, the herb being employed instead of the root: it has been brought into notice by Zollickoffer, who says that it is more astringent and slightly narcotic; but it is also purgative, &c. After evacuations, he prescribes it in tea-spoonfuls of the decoction, for Cholera infantum, diarrhea and dysentery. This plant is also one of those producing the salivation of horses, called Slabbering, when eaten by them through chance in meadows, and the remedy for which are Cabbage leaves. All our Spurges are more or less active plants, those with large perennial roots are all emetic, while the annual kinds are alterative or pernicious. One species *E. peploides* (*E. peplus* Americana) is said to cause the milk fever, or disease of Cows and cattle which render their milk or flesh pernicious. It grows from New-York to Tennessee, on rocks near streams. By a strange mistake the capsuls of the *E. lathyrus* (Capper plant of New England) are pickled instead of Cappers, being mistaken for the *Capparis Spinosa* or true Capper, and

are not found unpalatable, although they cannot be a healthy condiment.

Substitutes—*Gillenia Sp.—Sanguinaria Canadensis—Lobelia inflata—Asclepias Sp.—Erythronium Sp.—Eupatorium perfoliatum*—Officinal Ipecacuana and other active Emetics.

Remarks—The figure of Henry, under the name of Bowman's root is fictitious; the true Bowman's root is the *Leptandra.*

The *helioscopia,* which grew in the Northern States, has nearly the properties of the *E. hypericifolia,* as was well as the *E. polygonifolia* a small annual plant, growing on the sea shores from New England to Florida, and spreading flat on the sand.

No. 38.

FRAGARIA VESCA.

COMMON STRAWBERRY.

No. 38.

FRAGARIA VESCA.

English Name—COMMON STRAWBERRY.
French Name—Fraisier Sauvage.
German Name—Gemeine Erdbeere.
Officinal Name—Fragaria baccae.
Vulgar Names—American Strawberry, Wild Strawberry.
Synonyms—*F. virginiana and F. canadensis*, Wildenow, Persoon, Pursh, &c.
Authorities——Lin. Clayton, Colden, Cutler, Schoepf, Michaux, Pursh, Torrey, Eaton, many botanical works and some Materia Med. &c.

Genus Fragaria—Calix ten cleft, subequal, bearing the corolla and stamina. Petals, five on the base of the calix. Many stamina, unequal, filaments filiform, anthers round. Large central gynophore, pulpy, deciduous, bearing many Pistils immersed in it, and forming together a pulpy many seeded berry.—Leaves trifoliate, serrate, stipulate.

Species F. Vesca—Stoloniferous and hairy; radical leaves as long as the stems, stem leaves few, subsessile: folioles subsessile, oboval, lateral ones oblique.

DESCRIPTION—Root perennial, creeping, knotty, bunches of fibres at the knots. Stems of two kinds, some procumbent, stoloniferous, creeping,

rooting, slender, with few small leaves, and commonly sterile; true stems upright or reclined, short, with few leaves; both stems and leaves are more or less hairy. Leaves either radical or caulinal, the former on long petiols, the others nearly similar when at the base of the stem; but much smaller and with short petioles when higher up: stipules lanceolate or oblong, acute: three folioles sessile or nearly so, the middle one subpetiolate, nearly equal, but the lateral ones commonly oblique, and with fewer teeth inside; shape oboval or oval or nearly round, margin broadly serrate, surface with regular veins, lower surface pale and more hairy.

Flowers one or many on each stem, with pedicels erect or drooping. Calix spreading or reflexed, divided into ten acute segments, the alternate somewhat shorter. Five white petals, oboval or obcordate inserted on the calix. Many small stamina inserted there also, with short filiform filaments and small round anthers. Pistils many, very small, oval, with a small sessile stigma, forming a convex head, being inserted on a fleshy gynophore, which grows, becomes pulpy and colored, involving the pistils or the small seeds succeeding them, and forming together the fruit or Strawberry, which is either round or oval, and scrobiculate or punctate by little pitts, each corresponding to a seed inside: these fruits are either red or white.

HISTORY—Few plants are better known at first sight, and yet more difficult to describe, owing to the variable characters. Linnæus and many botanists

thought that all the Strawberries of the five parts of the world, formed only one species, the actual one. Others have thought otherwise and attempted to distinguish several species and varieties, among those found in America, Africa, Asia and Polynesia; but the difficulty has been to ascertain (as among the Roses) which are the specific or constant forms and which are variable deviations.

If every deviation of form, color, direction, pubescence and composition, was to be considered specific, we should have 100 kinds of Strawberries, and indeed some gardeners have described thirty or forty kinds, while more accurate botanists only acknowledge ten to fifteen species as yet. Meantime these species have all the same habit and flowers, differing only by some inconspicuous details.

Our wild Strawberry was long thought the *F. vesca*, until Wildenow and Pursh made two new species of it. In attending to the many varieties which I have seen in my travels, I thought that three or four more species could be made from them; but noticing that they are all connected by intermediate links, I came to the conclusion that they were only varieties of the *F. vesca*, and that the whole genus requires a revision. I could mention about twenty varieties of our wild Strawberries and seventeen from our gardens; but shall confine myself to seven of the most remarkable native kinds.

1. Var. *Uniflora*, stems simple, one flowered, one leaved, as long as the radical leaves, folioles sessile, suboval, incise-serrate; calix spreading or erect, pe-

tals rounded, fruits rounded or depressed—Common in glades. This is figured here.

2. Var. *Clandestina.* Nearly stemless, stems short leafless, two to five flowered, concealed by large radical leaves, folioles oboval, sessile; calix spreading or reflexed, fruit round or oval.—Rare in New York, Ohio, &c.

3. Var. *Pumila.* Stems short, one to two flowered, leaves shorter, very small oval and oboval, with adpressed silvery hairs, calix spreading and small.—In the mountains of Virginia &c. one or two inches high.

4. Var. *Glabra.* Stems two to three flowered, leaves ample, longer, nearly smooth, folioles oboval, subsessile, fruit oval. On the banks of the Ohio, Tennessee, Cumberland, &c.

5. Var. *Aprica.* Stems one to five flowered, leaves shorter, hairy, glaucous beneath, folioles subsessile oval and oboval, calix spreading, fruit suboval.—Very common in the western glades, and open fields from New Jersey to Virginia.

6. Var. *Sylvatica.* Stems 1-5 flowered as long as the leaves, folioles broad oval, subsessile, smooth above, calix spreading, fruit round or oval—This is probably the *F. virginiana* of many; common in woods and mountains.

7. Var. *Pendula.* Stems three to five flowered, leaves ample, folioles broad oval, smooth above, subsessile, calix spreading; fruits pendulous, globular, pubescent.—In the mountains of New England, Penn-

sylvania, &c. This must be the *Fr. Canadensis* of Pursh, &c.

All these varieties afford excellent fruits, rather small, but highly flavored, they are red, seldom white, and ripe from May to June, the blossoms appear in April and May. Strawberries are deservedly esteemed as pleasant and healthy fruits, and have long been tenants of gardens: the wild ones are always as good as those cultivated.

Fragaria belongs to the natural family of Senticoses next to *Rubus* and *Comarum*, and to *Icosandria polygynia* of Linnæus.

Locality—Strawberries are scattered all over the globe, in cold climates, or on the high mountains of warm countries. They are found on the Himala mountains of the centre of Asia, and from Natolia to Siberia and Japan in that Continent; they grow all over Europe, on Mount Atlas of Africa, on the mountains of the Polynesia Islands, and in America all over the Andes from Oregon to Chili, also from Alaska to Canada. In the United States, they are found every where in woods, glades, &c.

Qualities—The whole plant has a subastringent taste, the flowers have a honey smell, the fruits have a peculiar fragrant smell, and ambrosial acid flavor. The plant contains tannin: and Strawberries contain the malic and tartaric acid, some sugar and much water, besides an essential oil giving the Aroma.

PROPERTIES—Although Strawberries have been commonly considered as an article of food, they highly

deserve a place among medicaments, which are not the worse I should think for being palatable. Linnæus introduced them in his Materia Medica, as well as Schoepf, &c. They are diluent, refrigerant, subastringent, analeptic, diaphoretic, diuretic, pectoral, eccoprotic, &c. They are useful in fevers, Gravel, Gout, Scurvy, and Phthisis. They are cooling, promote perspiration, give relief in diseases of the bladder and kidneys, upon which they act powerfully, since they impart a violet smell and high color to urine. Hoffman and Linnæus have long ago extolled them in gout and phthisis; persons labouring under these chronic complaints ought to eat them frequently when in Season, and use at other times their Syrup. An excessive dose of either is however liable to produce emesis or a painful stricture in the bladder, with red urine, as I have experienced myself. But used moderately they are certainly a valuable medical diet in many cases. They possess also the property of curing chilblains, their water is used in France for that purpose as a wash. A fine wine can be made with them and some sugar. The Plant and leaves have nearly the same properties, although they are less cooling and more astringent. Both have been employed like Cinquefoil and Agrimony for sore throat, swelled gums, bowel complaints, jaundice and fevers in infusion and decoction. A Vinegar Infusion, Distilled Water, Syrup, Conserve, &c. of Strawberries are kept in shops in Europe.

Substitutes—Raspberries best substitute, Black-

berries, Mulberries, Red Currants, Cranberries and other acid berries, but none is so good, lacking either the diuretic or diaphoretic property.

Remarks—The *Arbutus Unedo* or Strawberry tree of Europe, is a fine evergreen and ornamental shrub, producing large berries similar to Strawberries, but belonging to different orders of plants, the Bicornes and *Decandria Monogynia* like the *Arbutus Uva ursi.* These berries are edible but less acid than Strawberries, and they are emetic even at a moderate dose, as I have myself experienced. This fine shrub does not grow in the United States, except in gardens.

The *Evonymus Americanus* is also called Strawberry shrub with us; but erroneously, since the berries hardly resemble Strawberries, being depressed, with four or five warty lobes, not eatable, and without any of their properties. The leaves of this shrub, however, as well as of *Evonymus atropurpureus* (the Wahoon or Arrow wood of the West and South) make a fine pectoral tea, much used for colds, coughs, catarrh, influenza, &c. The leaves of the *Crategus crus-galli,* or White-thorn are also used for the same purpose.

No. 39.

FRASERA VERTICILLATA.

English Name—AMERICAN COLOMBO.

French Name—Frasere Colombo.

German Name—Colombo Wurzel.

Officinal Name—Colombo. Frasera radix.

Vulgar Names—Colombo-root, Columbia, Indian Lettuce, Yellow Gentian, Golden Seal, Curcuma, Meadow Pride, Pyramid, &c.

Synonyms—*Swertia difformis* Lin. *Sw. frasera* Smith in Rees' Cyb. *Frasera carolinensis* Walter. *Fr. officinalis* B. Bart. *Fr. Walteri* Mich. &c.

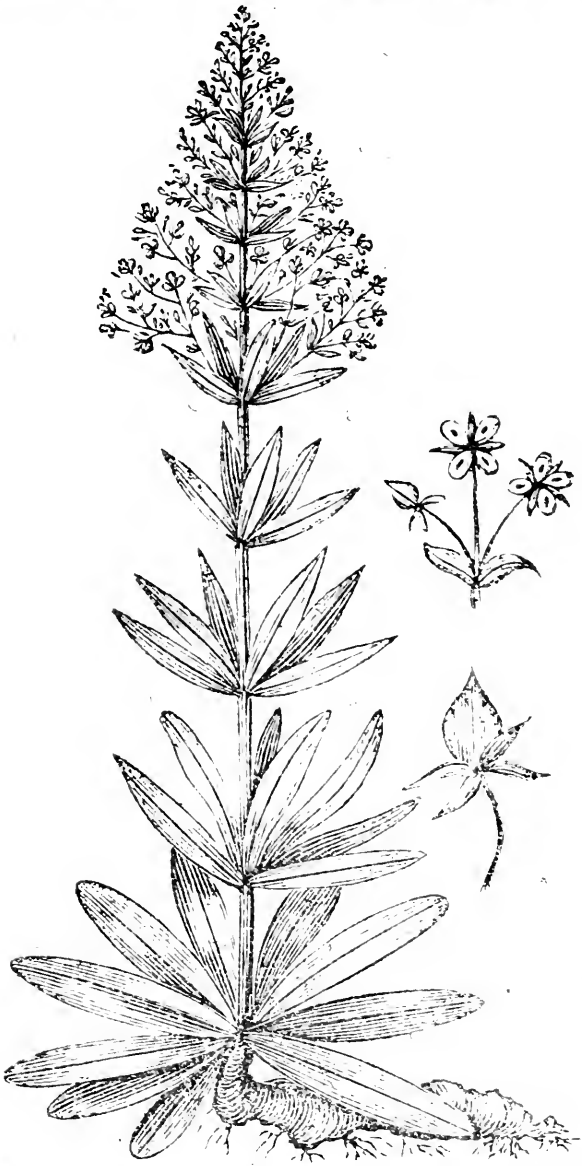
Authorities—Walter, Bartram, Michaux, Pursh, Persoon, Nuttall, Torrey, Schoepf, Elliott, Drake, Bigelow Sequel, Thatcher, Coxe, A. Ives, Hildreth, Zollickoffer, many Dispens. B. Barton, W. Barton, fig. 35 bad.

Genus Frasera—Calix persistent, four parted. Corolla spreading, rotate, four parted, segments elliptic, each having in the middle a large bearded gland. Stamina four short, alterne with the segments. One pistil, germen oval compressed, one style, two stigmas. Capsul oval flat, one celled, two valved, several winged imbricate seeds inserted on the valves.

Species *Fr. verticillata*—Very smooth, leaves sessile, entire, radical leaves procumbent, elliptic, obtuse; stem leaves vesticillate by five to seven, oblong or

No. 39.

FRASERA VERTICILLATA.



AMERICAN COLOMBO.

lanceolate, acute: flowers in a pyramidal panicle, bracts opposite.

DESCRIPTION—Root triennial, large, yellow, rugose, suberose, hard, horizontal, spindle shaped, two feet long sometimes, with few fibres. The whole plant perfectly smooth, stem from five to ten feet high cylindrical, erect, solid, with few branches, except at the top, where they form a part of the pyramidal inflorescence. Leaves all verticillate, sessile and entire, with a single nerve: the radical leaves form a star spread upon the ground, they are elliptical and obtuse, from five to twelve in number, from ten to eighteen inches long and from three to five broad, constituting the whole plant in the first years, or before the stem grows. The stem leaves are in whorls of four to eight, seldom more or less, smaller and narrower than the radical leaves, the lowest are narrow oblong, the upper lanceolate, acute, and sometimes undulate.

Flowers yellowish white, numerous, large, forming an elegant pyramidal panicle, the branches of which are axillary to leaves or bracts, unequally verticillate or trichotome: this pyramid is from one to five feet long: the bracts are ternate or opposite, shorter than the leaves, broader at the base, acute: pedicels lax, longer than the flowers, cylindric. Calix deeply four rted, spreading, segments lanceolate, acute, per- ent, nearly as long as the Corolla, which is one ich in diameter, open, flat, deeply four parted, with four elliptic cruciate segments, margin somewhat inflexed, end cucullate obtuse, a large gland in the middle of each, convex on both side, ciliate. The four

stamina opposite to the sinuses and inserted on them, filaments short, subulated, anthers oval oblong, base notched. Germen central oval, compressed, desinent into a style as long, and having two thick glandular stigmas. Capsul yellowish, borne on the persistent calix, oval, acuminate, very compressed, margin thin, sides subconvex, with a suture, opening in two flat valves, one celled. Seeds flat, elliptic, imbricated, winged around, inserted on the sutures of the valves. Sometimes a few flowers have five or six stamina, and as many segments to the Corolla.

Locality—It grows West, South and North of the Alleghany mountains; but neither on them, nor East of them. It is spread from the western parts of New York to Missouri and thence to Alabama and Carolina. It is found in rich woody lands, open glades and meadows. Rare in some places, in others extremely abundant.

HISTORY—One of the handsomest native plants of America: I have seen it in the western glades of Kentucky ten feet high, with a pyramid of crowded blossoms 4 or 5 feet long. They are scentless and in full bloom from May to July. It is a true triennial, the root sending only on the third year a stem and flowers.

Linnæus did not know well this plant, and called it *Swertia difformis:* it is so large that botanical specimens of it are generally defective like the patched figure of Barton. Walter gave it the name of *Frasera,* thinking that it was new, and dedicating it to an English gardener, *Mesadenia* would have been a better

name, expressing its generic peculiarity, of having 4 central glands, while *Swertia* has 8 glands, 2 at the base of each segment. Four specific denominations have been given, among which I have selected the best. It bears also many vulgar names, but Colombo root is the most common, since it has been found medical, and very similar to Calumba, once called Colombo also, the *Cocculus palmatus*. It is become a kind of substitute for it, and an article of trade on that account, being largely collected in the western states.

It affords few varieties, and stands as yet alone in its genus, the varieties are, 1. *Oppositifolia*. 2. *Undulata*. 3. *Pauciflora*. 4. *Angustifolia*, &c. the names expressing their deviations. It belongs to the Natural order of GENTIANIDES next to *Swertia*, and to *Tetrandria monogynia* of Linnæus.

QUALITIES—The root is the officinal part, it has a sweetish bitter taste like Gentian, and resembles Calumba in appearance, having a thick yellow bark, and a yellowish spongy wood. But their chemical characters are very different, the *Frasera* contains Extractive, Amarine, and Resin; while the *Cocculus palmatus* contains Cinchonin, a bitter Resin, Oil, Starch, Sulfate of Lime, and *Calumbine*. I suspect, however, that the analysis of the Frasera has not been accurate, and that it contains Inuline or a peculiar substance, *Fraserine*, intermediate between Inuline and Calumbine. It yields its qualities to water and alcohol. The leaves are also bitter.

PROPERTIES—Emetic and Cathartic when fresh,

Tonic, antiseptic and febrifuge when dry. When first brought into notice it was supposed to be equal to the Calumba, and substituted thereto; but has been found to be inferior, A. Ives even contends that it is inferior to many other native tonics. It has however the advantage over them to afford a very large root, often weighing several pounds, and to sell cheap: it is about equal to Gentian and Rhubarb, in diseases of the stomach, and debility. It has cured a wide spread gangrene of the lower limbs by internal use and external application, when bark had failed. It avails in Intermittents like other pure bitters, and is extensively used in the Western States in Fevers, Cholics, Griping, Nausea, relaxed stomach and bowels, Indigestion, &c. As a purgative it is substituted to Rhubarb in many cases, particularly for Children and Pregnant Women, being found serviceable in the constipation of pregnancy, &c. It has the advantage of not heating the body. Cold water is said to add to its efficiency and prevent nausea or emesis. A teaspoonful of the powder in hot water and sugar will give immediate relief in case of heavy food, loading a weak stomach. It is a good corrector of the bile alone or united with other bitters. Clayton and Schoepf, calling it *Swertia difformis*, say that it is employed in jaundice, scurvy, gout, suppressed menstruation and is a specific in hydrophobia! these indications require confirmation. The root ought to be collected from the fall of the second year to the spring of the third year growth; when in blossom the root becomes softer and less bitter. The doses are two

drachms of the powder, one or two ounces of the infusion; an extract of it ought to be made which would probably be like that of Gentian; a Vinegar is made of it in the west, useful as a refrigerant tonic, &c.

Substitutes—*Coptis trifolia—Xanthorhiza apifolia—Triosteum perfoliatum—Menyanthes trifoliata——Sabbatia angularis——Gentiana Sp.*—Rhubarb, Common Gentian, Calumba or *Cocculus palmatus* and many other tonics, chiefly roots, rather than barks.

Remarks—The *Frasera* deserves to be cultivated for its beauty and utility. It grows easily from seeds. It begins to disappear like the Ginseng, from large tracts of country, by being wastefully gathered. Perhaps the true Calumba might also be cultivated in Florida and Louisiana.

No. 40.

GAUTIERA REPENS.

English Name—MOUNTAIN-TEA.

French Name—Gautiere rampante.

German Name—Bergbeere.

Officinal Names—Gaultheria, Gualtheria.

Vulgar Names—Partridge-berry, Grouse-berry, Deerberry, Spiceberry, Teaberry, Redberry, Wintergreen, Redberry-tea, Mountain-tea, Groundberry, Ground Ivy, Ground holly, Hillberry, Box-berry, Chequer-berry, &c.

Synomyms—*Gualtheria* or *Gaultheria procumbens* of many Botanists, &c.

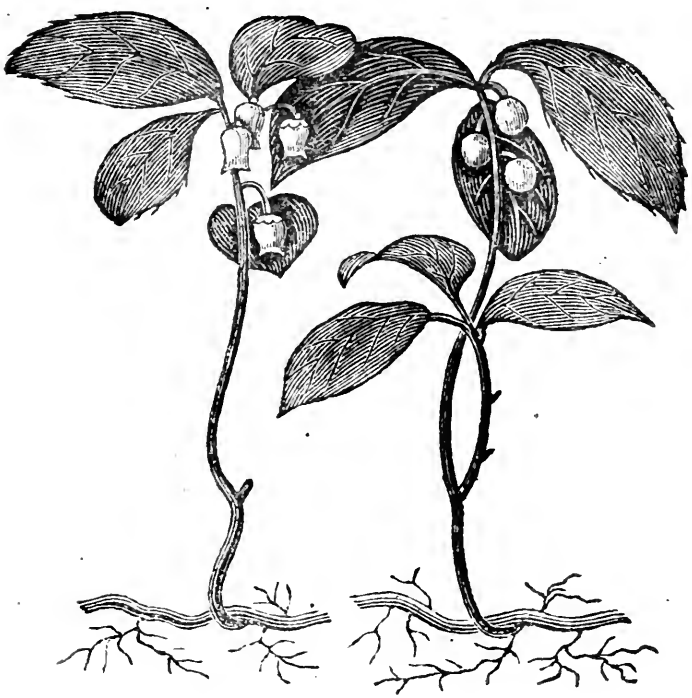
Authorities—Lin. Schoepf, Kalm, Duh. Colden, Mich. Pursh, Eaton, Torrey, B. Bart. fig. 15. Coxe, Zollickoffer, Big. fig. 22 bad and Seq.

Genus Gautiera—Calix campanulate five cleft persistent with two scales at the base. Corolla oval five toothed. Stamina ten equal, on the base of the Corolla, filaments hairy, anthers bifid above, ten scales alternate with the filaments. Germen free round, style filiform, stigma obtuse. Fruit a round berry formed by the persistent calix become globulous, fleshy, five toothed, inclosing a Capsul five celled, five valved, many seeded.

Species G. repens—Root creeping, Stems erect, leaves few, terminal, conferted, evergreen, petiolate,

No. 40.

GAUTIERA REPENS.



CREEPING POLLOM,

obovate, mucronate. Flowers few, terminal, with drooping peduncles.

DESCRIPTION—Root horizontal, creeping, slender, yellowish, with few fibres. Stems several, upright, few inches high, slender, base naked with a few scales. Leaves terminal, nearly fasciculate, unequal, few, three to five on short petiols, scattered, coriaceous oval or oboval, pale beneath, acute, with some short mucronate teeth.

Flowers few, terminal, subaxillary, on drooping downy peduncles. Calix double, external bifid, scaly, interior campanulate five cleft, changing afterwards into the fleshy covering of the fruit. Corolla ovate, white or flesh colored, with five teeth. Ten Stamina of a rose color, filaments plumose, bent on the base of the corolla, alterne with ten small scales, anthers oblong orange color, bilobe two-horned, dehiscent outside, pollen white. Germ round, depressed resting on a ring which bears the ten scales or teeth. Style erect, filiform. Stigma obtuse, moist. The fruit is a small five celled five valved and many seeded capsul, inclosed within the fleshy calix, which assumes the appearance of a round scarlet perforated berry, of the size of a pea.

LOCALITY—On hills and mountains, in shady woods, Pine woods, rocky and sandy soils, from Maine to Carolina and Indiana; unknown in rich alluvial or limestone plains.

HISTORY—Dedicated to Dr. Gautier of Canada by Kalm, wrongly mispelt *Gaultheria* and *Gualtheria* by many; but errors ought not to be copied for-

ever, thus the misname of *procumbens* given to it must at last be changed into *G. repens*, since it is creeping and not procumbent. It belongs to the Natural family of ERICINES or BICORNES, and to *Decandria monogynia* of Linnæus.

The whole plant has long been known and used as a pleasant common drink in the country by the name of mountain-tea. The berries have a peculiar grateful flavor, and are eaten by children, although rather dry. They are eaten greedily by Game and birds, Deer, Rabbits, Partridges, Grouse, &c. and impart a fine flavor to their flesh, in the fall and winter, when ripe. The plant blossoms from June to September. It is known by a multitude of local names.

QUALITIES—The whole plant has a peculiar taste and smell, aromatic and sweet. It contains sugar, tannin, mucilage and an essential Oil, in which reside the taste, smell and properties. This Oil is very singular and peculiar, it is very heavy, sinking in water, yet volatile, perfectly transparent of a greenish white, aromatic, sweet and highly pungent, containing a peculiar principle *Gautierine*.

PROPERTIES—Stimulant, anodyne, astringent, menagogue, antispasmodic, diaphoretic, lacteal, cordial, &c. A popular remedy in many parts of the Country. It is generally used as a tea, but the essence and Oil possess eminently all the properties, and are kept in shops. The tea is used as a palliative in asthma, to restore strength, promote menstruation, also in cases of debility, in the secondary stage of diarrhœa, and to promote the lacteal secretion of the

breast, &c.: it is a very agreeable and refreshing beverage, much preferable to imported China Teas. The Oil and Essence prepared by dissolving it in Alcohol, are employed whenever warm and cordial stimulants are required. The Oil cures the tooth-ache or allays the pain of carious teeth, like other strong essential Oils. The Indians made great use of this plant as a stimulant, restorative, cordial, &c. It is injurious in fevers.

Substitutes—*Monarda* Sp.—*Panax* or *Ginseng*—*Laurus benzoin*—*Aristolochia serpentaria*—*Asarum canadense*, &c. &c.

Remarks—All the plants which have more or less the smell and taste of *Gautiera*, contain the same Oil and principle, and may probably be available equivalents. They are *Gautiera hispidula* and *Spirea ulmaria*, roots of *Polygala paucifolia* and *Spirea lobata*, bark of *Betula lenta* or Sweet Birch tree, &c. They are called Pollom by the Indians.

The Oil of *Gautiera* is now used in all the secret officinal Panaceas to disguise or cover the taste of the other ingredients, which are generally common articles such as Guayacum, *Solanum dulcamara*, Sarsaparilla, Mezereon, *Stillingia sylvatica*, Snake roots, Spikenards, &c

No. 41.

GENTIANA CATESBEI.

English Name—CATESBIAN GENTIAN.
French Name—Gentiane de Catesby.
German Name—Katesbys Enzian.
Officinal Name—Gentiana Catesbiana.
Vulgar Names—Blue Gentian, Southern Gentian, Blue-bells, Bitter-root.
Authorities—Catesby fig. ...., Walter, Elliott, Macbride, Bigelow, fig. 34, and Seq. Coxe Disp. Zollickoffer, &c.

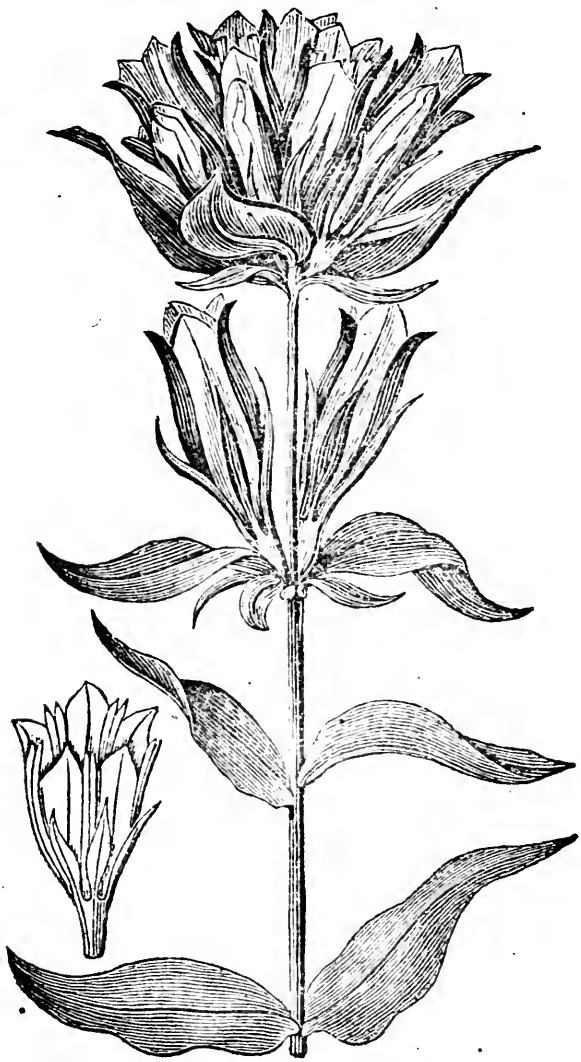
Genus Gentiana—Calix campanulate four or five cleft, segments unequal. Corolla with a tubular base, and a variable limb, with four to fifteen lobes or teeth. Stamina five equal, inserted on the tube, not exserted. One stipitate Germen oblong, two stigmas sessile or with a style. Capsule 1 celled, 2 valved, many seeded.

Species G. Catesbei—Stem rough, leaves opposite, sessile, ovate lanceolate, subtrinerve, acute, flowers capitate; calicinal segments longer than the tube: Corolla tubular, ventricose, plaited, with ten teeth, five alterne larger acute, five smaller bifid.

DESCRIPTION—Root perennial, yellowish, branching, fleshy. Stem simple, erect, cylindric, rough, 1 or 2 feet high. Leaves remote, opposite, decustate, ovate or lanceolate, entire, slightly trinerve,

No. 41.

GENTIANA CATESBEI.



CATESBIAN GENTIAN.

acute, rough in the margin.—Flowers subsessile in a crowded terminal head, of six to twelve, surrounded by an involucrum of four leaves and some lanceolate bracts, often some axillary flowers below the head. Calix with segments longer than the base, linear-lanceolate, unequal, acute. Corolla large two inches long, of a fine azure blue, base short tubular, limb large, plaited, swelled, tubular, open at the top; border ten cleft; five smaller lobes alternating with the others, but opposite to the calicinal and stamina, bifid, acute, ciliate: the five larger lobes rounded, acute, entire. Five Stamina shorter than the corolla, with subulate filaments and sagittate anthers. Germen oblong-lanceolate, compressed, stipitate; style very short, two oblong reflexed stigmas. Capsule oblong, acute at both ends, one celled, two valved, many small seeds inserted on the valves or a longitudinal placenta on each valve.

Locality—It grows from Carolina to Alabama and West Kentucky, in glades and open plains.

HISTORY—This species was long considered as a variety of the *G. Saponaria* of the Northern States; but distinguished by Walter and Elliott, and named after Catesby, who gave an imperfect figure of it long before. It is one of our best native medical Gentians, but we have many others; in the Northern States the *G. quinqueflora* is the officinal kind.

All the Gentians are beautiful plants, more or less bitter in the roots or leaves. There are many species in the United States, some of which have only lately been noticed and many are as yet undescribed. The

Genus *Gentiana* took its name from Gentius, king of Illyria, it gives its name to a large Natural Family, and belongs to *Pentandria digynia* of Linnæus, although it has often more or less than five Stamina, and seldom if ever two styles. That genus is a very heterogeneous one, although striking by its habit; but the flowers have the peculiarity of being variable in shapes and numbers; wherefore many botanists have rationally divided it into subgenera, which might be rather deemed Genera. Almost all our species belong to the *S. G. Pneumonanthe* having oblong or tubular Corolla, and five Stamina, except the *G. crinita* which belongs to *S. G. Eublephis* having four Stamina and a hypocrateriform ciliated Corolla. While the officinal Gentian or *G. lutea* of Europe belongs to *S. G. Rotularia* having rotated Corolla, with five to nine Stamina.

All our Gentians are autumnal plants, blossoming very late from September to November: They are all ornamental and would adorn our gardens, where some are already introduced.

QUALITIES—The root has a mucilaginous and sweetish taste, followed by an intense bitterness like that of the officinal Gentian. It contains Amarine, Extractive, Mucilage, Resin, Sugar, Oil, and the principle *Gentia*, which is soluble in Water and Alcohol, as well as all the active parts: the solutions are more bitter than the root in substance: No astringency.

PROPERTIES—Tonic, Sudorific, Antiseptic, Corroborant, Cathartic, &c. It is very little inferior

to the officinal Gentian in strength and efficacy, it invigorates the stomach, and is very useful in debility of the stomach and the digestive organs: it increases the appetite, prevents the acidification of food, enables the Stomach to bear and digest solid food, and thus cures Indigestion or Dyspepsia. It is much used in the Southern States in hectic and nervous fevers, pneumonia, &c. acting as a sudorific tonic. It may be used like common Gentian in general debility, Marasm, Hysteria, and even Gout. Also united to astringents for intermittents and other fevers. The dose is in substance from 10 to 40 grains, in tincture one fourth of an ounce to one ounce, in extract 2 to 8 grains. In large doses the Gentians prove cathartic like *Frasera.* They enter in all digestive pills and preparations.

Substitutes—*Frasera Verticillata, Menyanthes, Triosteum, Coptis, Sabbatia, Xanthorhiza,* &c., besides nearly all the native Gentians that follow.

Remarks—Our native Gentians being little known as yet, and all medical, I deem it proper to annex here a complete account of them, with notices on the new kinds.

1. *G. Quinqueflora* Lin. or five flowered Gentian. Easily known by its branched winged Stem; small oval, clasping leaves; flowers five cleft, small, axillary by bunches of three, four or five and blue—Common from New England to Kentucky, and the best substitute, the whole plant may be used, being intensely bitter like *Sabbatia angularis.* Annual.

3. *G. Amarelloides* Michaux or Yellow bunch

Gentian. Differs from the former by oval lanceolate leaves, stem round with four small angles, flowers axillary and terminal, yellowish, calix longer foliaceous.—In Kentucky, Illinois, &c. Equal to the former. Annual.

3. *G. Crinita* Wild. Fringed Gentian. Easily known by its lanceolate leaves, large solitary flowers on long peduncles with a fringed four cleft corolla, &c.—An elegant species found from New York to Carolina. Perennial like all the following.

4. *G. Saponaria* Lin. Soap Gentian. Leaves oval lanceolate, acute, trinerve, flowers verticillate, sessile; calix with short oval segments: corolla oblong, with ten teeth, the interior unequally trifid.—Common from New England to Virginia, medical.

5. *G. Clausa* Raf. Closed Gentian. Stem round smooth, leaves ovate lanceolate, acuminate, subtrinerve: flowers verticillate, sessile; calix four to six cleft angular, segments foliaceous short: Corolla clavate, short, closed 8–10 teeth, internal teeth equally bilobe. On the Taconick and Green mountains, flowers blue, half the size of *G. Saponaria* and quite shut. Variety with ternate lanceolate leaves.

6. *G. Angustifolia* Michaux. Narrow leaved G. Stem simple, slender, one flowered, leaves narrow linear spreading: Corolla funnel shaped ten cleft, with five internal lacerate segments.—Rare, beautiful large flowers, in New Jersey, Carolina, &c.

7. *G. Linearis* Willd. Linear G. Stem rough, leaves linear lanceolate, undulate, ciliate; flowers capitate, sessile, Corolla campanulate five cleft, with

the internal folds denticulate.—In the Alleghany mountains.

8. *G. Ochroleuca* Wild. Pale G. Stem rough angular, leaves elliptic rough; flowers capitate, sessile: Corolla ventricose, closed, five cleft, inner folds simple, acute.—In New York, Pennsylvania, &c. flowers yellowish white.

9. *G. Heterophylla* Raf. Grey G. Stem simple, erect, round, smooth; leaves subtrinerve, lower oboval obtuse, medial elliptic, upper oblong acute: Flowers terminal, sessile two to four, calix campanulate, segments cuneate obtuse; Corolla ventricose, five cleft, segments acute, bidentate on one side.—On the mountains of Virginia, East Kentucky and Tennessee, flowers of a pale bluish grey. Sometimes called Flux-root and used for the Disentery.

10. *G. Serpentaria* Raf. Snake-root G. Stem smooth, flexuose, subangular; leaves obovate or oblong, subobtuse, subtrinerve, undulated: Flowers fascicled sessile, bracteoles petiolate, calix campanulate, angular, segments linear and carinate: Corolla tubular five cleft, segments obtuse notched, inner folds lacerated.—In Indiana, Illinois, &c. Root considered a specific for men and cattle bitten by Rattlesnakes and Copper-heads; it is also said to stupify snakes.

11. *G. Shortiana* Raf. Shortian Gentian. Several assurgent stems, rough, ancipital, one flowered; leaves oblong or cuneiform, as long as the intervals, glaucous beneath, edges rough, uninerve, the lower obtuse. Flower sessile bracteate, calicinal segments

short, oblong: Corolla nearly campanulate, five cleft, internal folds lacerated—Common in the glades of Kentucky, Tennessee, Illinois, &c. Stem sometimes only four inches, and flower above one inch, blue. Var. *biflora*, stem upright, two flowered. Dedicated to Dr. Short of Kentucky, who has communicated to me several of the fine following new species.

12. *G. Torreyana* or Torreyan. Stem erect, rough, quadrangular, leaves linear-lanceolate, obtuse, glaucous, short, twice as long as the intervals, uninerve, clasping, often revolute. Flowers three to five, terminal, sessile, calicinal segments linear, as long as the tube: Corolla nearly campanulate; five cleft, segments acute, inner folds entire—In the glades with the foregoing, flowers blue, one inch long. Dedicated to Dr. Torrey.

13. *G. Rigida* Raf. Stiff G. Stem stiff, round, rough; leaves lanceolate, acute, stiff, small, subtrinerve, clasping, longer than the intervals. Flowers one to five terminal, calicinal segments linear, as long as the tube: Corolla campanulate five cleft, segments acute, inner folds entire—In West Kentucky, Tennessee, &c. stem red, flower blue, one inch long, leaves glaucous beneath, small.

14. *G. Elliottea* Raf. or Elliottian G. Stem round, smooth, leaves oblong, narrow, subacute at both ends, as long as the intervals, subtrinerve, glaucous beneath: Flowers three to five terminal, sessile; calix elongated, segments oblong acute, as long as the tube: Corolla campanulate, segments acute, inner folds lace-

rated—In West Kentucky, leaves few, three inches long, flowers 1 1-2 inches, blue. Dedicated to Elliott.

15. *G. Gracilis* Raf. Slender G. Stem slender, rough, round ancipital; leaves twice as long as the intervals, not spreading, linear, uninerve, clasping, the lower obtuse, upper acute: Flowers two to five, sessile, long and slender, calicine segments linear, as long as the tube: Corolla slender, tubular sub-campanulate, five cleft, segments deep, acuminate, inner folds simple—In West Kentucky. It has neither the leaves ciliate and undulate as in *G. linearis* nor the glaucous short leaves of *G. torreyana.* A variety of this with broader leaves, more spreading, may be the *G. pneumonanthe* of Michaux, but not Linnæus. Leaves in both one inch long, and flowers two inches long.

16. *G. Axillaris* Raf. Axillary G. Stem round, rough; leaves oblong lanceolate, acute at both ends, trinerve, twice as long as the intervals: flowers axillary, pedicellate, shorter than the leaves; segments of the calix linear, as long as the tube: Corolla tubular, five cleft, segments acute, with a lateral tooth—Glades of West Kentucky. Leaves three inches long, flowers one inch, with two lanceolate bracts.

17. *G. Collinsiana* Raf. Collinsian G. Stem round, smooth; leaves lanceolate, acuminate, trinerve, longer than the intervals; flowers capitate, involucrate, segments of the calix lanceolate, acute, as long as the tube: Corolla campanulate, five cleft, segments mucronate, inner folds rounded, notched.—A fine species, leaves three inches long, flowers two inches, blue.—

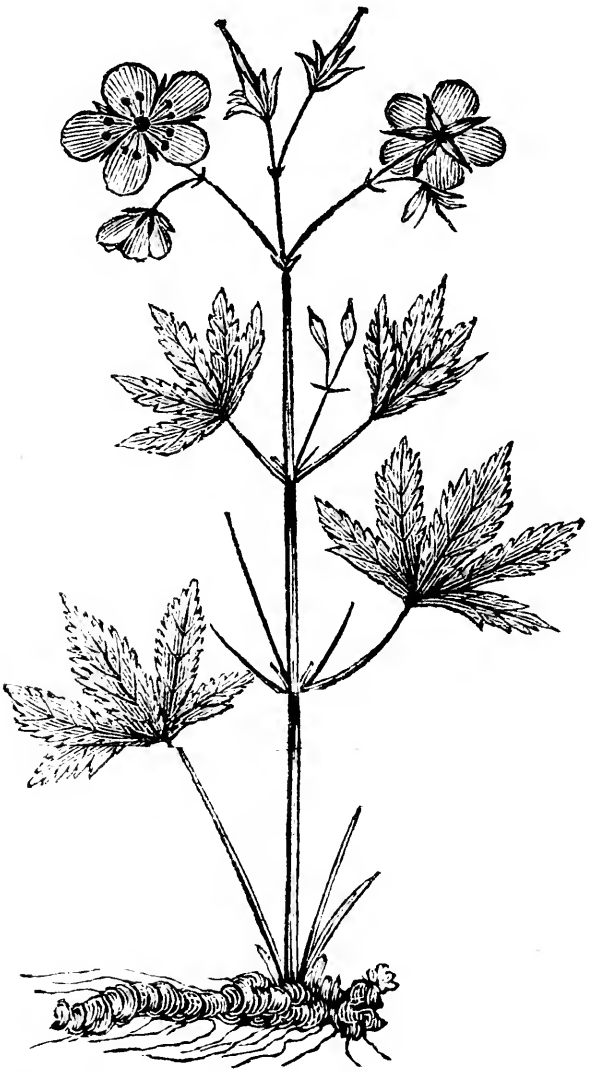
In the glades of Indiana, Illinois, Missouri and West Kentucky. Dedicated to Z. Collins.

I have never seen the *G. pneumonanthe* nor *G. Villosa* of Linnæus. I suspect that the true *G. pneumonanthe* of Europe, does not grow in America, all our species being different from the European, and that either *G. gracilis* or *G. torreyana* was meant by Michaux. As for *G. villosa* it is a doubtful plant, seen by very few botanists, all our Gentians have smooth leaves, I suspect that it may be a hairy variety of my *G. heterophyllo.*

The above account may be considered as a concise monography of our Gentians; but there are some other species in the southern states. The perennial kinds, which are the most numerous, have their medicinal properties concentrated in the roots, which may safely be substituted to the officinal Gentian. The annual kinds have the whole plant intensely bitter and available as in *Sabbatia, Chelone glabra, Verbena hastata* &c. They all ought to be cultivated for their beautiful blue blossoms, and officinal utility.

No. 42.

GERANIUM MACULATUM.



SPOTTED CRANESBILL.

No. 42.

GERANIUM MACULATUM.

English Name—SPOTTED CRANE'S BILL.

French Name—Geranium Macule.

German Name—Geflecter Storchschnabel.

Officinal Names—Geranium radix, Kino Americanus.

Vulgar Names—Crowfoot, Alum-root, Tormentil, Storkbill. In Canada and Louisiana, *Racine a becquet.*

Authorities—Lin. Mich. Pursh, Schoepf, Colden, Coeln, Thacher, B. Barton, Mease, Coxe, Eberle, A. Ives, Zollickoffer. Big. fig. 8, and seq. W. Barton fig. 13.

Genus Geranium—Calix five parted, equal, persistent. Corol five equal petals. Stamina 10, hypogynous, filaments monadelphous or united at the base, five alternate shorter. Germ central with five glands at the base, a persistent style, five stigmas. Fruit five capsuls one seeded, attached by a beak to the persistent style.

Species G. Maculatum—Perennial, hairy, erect dichotome; leaves few, opposite, three to five parted, palmate, segments oblong acute, jagged: peduncles elongated, biflore, petals obovate.

DESCRIPTION—Root perennial, horizontal, oblong, thick, rough, knobby, brownish spotted with greenish, whitish inside, very brittle when dry, with

few short fibres. Stem erect, round, with few dichotome branches and leaves, covered as well as the petiols with retrorse hairs, and from one to three feet high. Several radical leaves on long petiols, the stem leaves opposite, at the distant forks, on shorter petiols; floral leaves nearly sessile: all are palmate, five parted, seldom three parted, segments oblong or cuneate, pubescent entire at the base, unequally jagged above, sometimes spotted: stipules linear or lanceolate, membranaceous ciliate.

Flowers geminate on biflore peduncles, arising from the forks, erect, round, swelled at the base, with linear bracts, similar to the stipules. Calix formed by five deep segments, oval lanceolate, cuspidate, five nerved, hairy outside, margin membranaceous or ciliated. Five equal petals, obovate, entire, red with purple veins, twice as long as the calix. Stamina 10, filaments erect, shorter than the petals, connected at the base, filiform above, five alterne shorter, anthers oblong violet—Germ ovate, with five glands at the base, style erect, grooved, persistent, five oblong obtuse stigmas. Fruit a capsul divided into five coccas or one seeded capsuls, attached inside to the style, and curling up at maturity.

Locality—All over the United States from Maine to Louisiana, Missouri and Florida; very common in woods, copices, hedges, glades, &c. no where more abundant than in the western glades of Kentucky, &c.

HISTORY—The genus Geranium of Linnæus forms a most beautiful group of plants, of which nearly 200 kinds are known, and many adorn our gardens.

They are now the type of a natural family GRUINALES or GERANIDES, divided into many genera: *Erodium* with five stamina, *Pelargonium* with seven, besides *Gruinalium, Monsonia, Oxalis,* &c. The name is now restricted to the species with ten stamina; it derives from a Greek name meaning Crane. The *G. maculatum* belongs to the true decandrous Geraniums: the specific name applies to the root and leaves which are often spotted or mottled; but a variety is spotless. The varieties are many, such as 1. *Humile,* 2. *Diphyllum,* 3. *Viride,* 4. *Albiflorum,* 5. *Macrophyllum,* &c.

It is a beautiful plant, deserving cultivation, the flowers are large, but scentless, red, purple or white, with darker veins. It blossoms in the spring, from May to July. It has an extensive native range, and I have seen it growing by millions in the glades of West Kentucky, where it could be collected cheaply for use and exportation. The best time for collection is the fall.

Geranium belongs to *Monadelphia decandria* of Linnæus, the *Pelargonium* or African Geraniums of the gardens, to *M. heptandria.*

QUALITIES—Root nearly scentless, taste astringent, but not unpleasant; it contains much tannin, more than kino, extractive, lignine and kinic acid? or a peculiar acid differing from gallic acid in not reddening vegetable blues, and not passing over in distillation. The active principles are soluble in water and alcohol: the alkalies neutralize them.

PROPERTIES—Powerful astringent, vulnerary,

subtonic and antiseptic. The root is the officinal part, and is a pure, pleasant and valuable astringent, equal to kino and catechu, and deserving not only the name of American Kino; but to be introduced in Materia Medica as a superior equivalent. It is a better tonic than kino, and therefore preferable to it in the treatment of morbid fluxes connected with relaxation and debility. Its internal use is indicated in the secondary stages of Dysentery and Cholera Infantum: it is extensively used in the country for all bowel complaints; but sometimes improperly or too early. A gargle of the decoction is useful in cynanche tonsilaris and in ulcerations or aphthous sores of the mouth and throat. The infusion is a valuable lotion in unhealthy ulcers and passive hemorrhagy, also one of the best injections in gleet and leucorhea. It was once deemed a styptic in bleeding hemorrhagy, but has failed in many instances. United to our native Gentians or to *Frasera*, it forms one of the most efficient cures for intermittents. A decoction in milk is very good in looseness of bowels and diarrhea. Our Indians value this plant highly, and use it for wounds, gonorrhœa, ulcers on the legs, diabetes, bloody urine, involuntary discharges of urine, immoderate menstruations, &c. The general effects on the system are to give tone to the bowels and stomach, stop all immoderate discharges, and prevent internal mortification. It has also been recommended in scurvy, nephritis and phthisical diarrhea, but does not avail much in those disorders. Not being at all stimulant, it may be useful when sedative astringents are required. It has cured a periodical

hemoptysis according to Dr. Harris. It is also used in Veterinary for the diseases of cattle or horses, and cures the bloody water of cattle. The doses are one to two ounces in infusion or decoction, two to four drachms of the tincture, fifteen to forty grains of the powder, and ten to fifteen grains of the extract, which is a most powerful and efficient astringent, equalled only by the extract of *Spirea tomentosa*.

Substitutes—*Orobanche Virginiana*—*Statice Caroliniana*—*Tormentilla erecta*—*Rubus villosus*—*Heuchera species*—*Geum Sp.*—*Spirea tomentosa* and *Sp. opulifolia*—Kino, Catechu, Galls and all powerful vegetable astringents.

Remarks—The officinal kinos are four. 1. African Kino or *Pterocarpus erinacea*, 2. Botany Bay Kino or *Eucalyptus resinifera*, 3. Jamaica Kino or *Butea frondosa*, 4. American Kino or *Geranium maculatum*, this last is the most efficient and powerful, by far preferable to all the others, since it has no bitterish taste nor resinous matter, like the first and third, nor the disagreeable sweetish taste of the second. It ought to supersede them in our pharmacies at least, if not elsewhere. The Catechu or extract of *Minosa Catechu* is merely equal to it.

The *Geranium robertianum* of Europe, grows also in North America from New England to Ohio, on stony hills, and is a weak equivalent of the *G. maculatum;* but it is also diuretic, and therefore more available in nephritis, gravel, and diseases of the bladder. It will be easily known by its musky smell, annual root, small flowers, &c.

No. 43.

GEUM VIRGINIANUM.

English Name—WHITE AVENS.

French Name—Benoite de Virginie.

German Name—Bennet.

Officinal Name—Geum radix.

Vulgar Names—Evan root, Avens, Chocolate root, Bennet, Cure-all, Throatroot.

Authorities—Lin. Mich. Pursh, Kalm, Schoepf, Cutler, A. Ives, Buckhaven, Melandri, Zollickoffer, Bigelow seq. Coxe, &c.

Genus Geum—Calix ten cleft, spreading, the alternate segments smaller. Petals five on the calix. Many stamina inserted on the base of the calix. Many central pistils, each with a long persistent style and obtuse stigma, and becoming a seed. Seeds forming a cluster, awned by the styles.

Species G. Virginianum—Pubescent, stem erect, radical and lower leaves ternate, petiolate, upper sessile and simple, folioles ovate, lanceolate, acute, unequally serrate, stipules ovate, serrate or entire: flowers few, erect, petals oboval, shorter than the calix; awns uncinate, hairy, twisted.

DESCRIPTION—Roots perennial, small, brittle, brown, crooked, tuberculated, oblong, horizontal. Stem simple, erect, about two feet high, pubescent, few flowered. Radical leaves on long petioles, with-

No. 43.

GEUM VIRGINIANUM.

WHITE AVENS.

out stipules, lower leaves with large stipules and shorter petioles, upper leaves sessile, simple, similar to the folioles of the lower leaves, which are oval, or oval-lanceolate, or lanceolate, base acute, and acuminate, border deeply and unequally serrate: stipules large, broad, sessile, ovate or rounded, serrate or nearly entire.

Flowers terminal, white, few, on erect peduncles. Calix spreading, ten cleft, segments lanceolate, acute, five alternate smaller. Five yellowish white petals, opposite to the short segments, shorter than the longest, and inserted on the base of the calix, oboval, entire, flat. Stamina many, short, unequal, perigynous; filaments filiform, anthers roundish and yellow. Pistils many, conglomerate, oval, styles long, hairy, stigma hooked. Fruit a small burr or round cluster of achenes or single seeds, oval, brown, smooth, having a long tail or awn, formed by the persistent styles, filiform, hairy, twisted and uncinate at the top.

Locality—Common from Maine to Carolina and Kentucky, in woods, groves, thickets, hills, &c.

HISTORY—An estival plant blossoming in June and July, the flowers resemble those of Strawberries, but are smaller; a variety has them yellowish. The varieties are 1. *Uniflora*, 2. *Macrophylla*, 3. *Lanceolata*, 4. *Ochroleuca*, 5. *Ramosa*, &c.

The *Geum rivale* or water Avens, a boreal plant, spread from New England to Canada in damp places, is more commonly employed in the north, and this species in the south; they are both equivalents.

Geum belongs to the natural order of Senticoses

near *Dryas*, *Dalibarda* and *Stylypus*, and to *Icosandria polygynia* of Linnæus.

QUALITIES—The whole plant is available, but the root is principally used, it has a bitterish astringent taste, and a pleasant smell, somewhat like cloves, only perceptible in the spring, when it must be collected for use. It contains resin, gum, tannin, extractive, mucilage, fibrine, a volatile oil, &c. The *Geum urbanum*, a consimilar and equivalent species, has been found to contain out of two ounces, 496 grains of lignine, 118 of tannin, 181 extractive, 61 of saline and soapy matter, 92 of mucilage, 23 of resin, 76 of oil and water. It yields these principles to water and alcohol, and dies them red: the alcoholic preparations are scented, the watery scentless and merely astringent.

PROPERTIES—All the Avens have nearly the same properties, they are astringent, styptic, tonic, febrifuge, stomachic, &c. They are much used in the Northern States and Canada. In Connecticut they supersede the Chincona; but they are weaker, although less stimulant, in fevers. They do not increase excitement and are therefore useful in hemoptysis and Phthisis. They are decidedly excellent in dyspepsia and visceral affections; Ives states that its long use, restores to health the most shattered and enfeebled constitutions. They are often used in decoction with sugar and milk, like chocolate or coffee, to which they resemble: and also for dysentery, chronic diarrhea, colics, debility, asthma, sorethroat, leucorhea, uterine hemorrhagy. They are the base of

the Indian Chocolate of Empirics. The doses are a daily pint of the weak decoction, or about 60 grains of the powder daily, divided into three doses: this powder may be mixed with honey. A table-spoonful of the tincture is also given in some cases. These roots are sometimes put in Ale, as stomachics.

SUBSTITUTES—*Geranium maculatum* and all the plants mentioned as equivalent to it; the *Geum rivale* and *G. urbanum*, also the *Stylypus Vernus*.

REMARKS—The *E. urbanum* does not grow in America, although indicated by some. The *G. rivale* of America is a peculiar variety. It will be known from this, by its locality in the north, near waters, the radical leaves pinnate, cauline three cleft, and large purplish nodding flowers. It is said to be more efficient than this kind.

My *Stylypus vernus* is a new annual plant, growing only in the Western States, from Ohio to Tennessee, in woods, and bears small yellow blossoms in March and April. It has the properties of this plant and Agrimony. The generic and specific character are as follows.

G. Stylypus. Calix persistent, campanulate, five cleft, segments reflexed. Five small petals and many Stamina inserted on the top of the calix. Many Pistils in a head borne by a cylindrical gynophore. Several Seeds or Achenes, with persistent smooth Styles.—*Stylypus vernus* Annual, many decumbent Stems, leaves interrupted pinnate, folioles laciniated, upper leaves simple jagged: flowers terminal, few, peduncled.

No. 44.

GILLENIA STIPULACEA.

English Name—WESTERN DROPWORT.

French Name—Gillenia occidentale.

German Name—Gillenwurzel.

Officinal Name—Gillenia radix.

Vulgar Names—Indian Physic, Indian hippo, Ipecac, Beaumont root, Bowman's root, Meadow sweet, &c.

Synonyms—*Spirea trifoliata* Var. Auct.

Authorities—Pursh, Wildenow, Schoepf, Thatcher, Coxe, Duncan, Nuttal, Mœnch, Eberle, A. Ives, Baum, W. Bart. fig. 6, &c.

Genus Gillenia—Calix campanulate 5 cleft. Five narrow unequal petals inserted on the calyx. Many short Stamina inserted there also. Five coherent pistils, five Styles. Capsules five connate at the base, opening inside, unilocular, two seeded.

Species G. Stipulacea—Lower leaves pinnatifid, upper leaves trifoliolate, folioles lanceolate [incise serrate; stipules foliaceous, ovate, oblique, jagged: flowers loosely corymbose.

DESCRIPTION—Root perennial, dark brown, amorphous, with large and long fleshy fibres. Several Stems from two to three feet high, slender, smooth, brittle, reddish, branched. Leaves large, alternate, sessile, with three folioles and two large stipules;

No. 44.

GILLENIA STIPULACEA.

WESTERN DROPWORT.

these last are oblique, ovate, irregularly jagged, acute. Folioles smooth, lanceolate, acute at both ends, with a large nerve, border unequally serrate or jagged, and in the lower leaves often pinnatif.—Flowers in loose thin terminal corymbs, peduncles clingated, calix campanulate with five teeth; petals white, three times as long, linear lanceolate, a little unequal, base cuneiform, and nearly obtuse. Stamina short, inclosed, anthers round yellow. Pistil central free, five parted, five filiform Styles, five obtuse stigmas, five connected Capsuls, &c. &c.

Locality—Found only West of the Alleghany mountains, from Ohio and West Virginia to Missouri and Louisiana; rare in the limestone and alluvial regions, very common in the hilly and sand-stone regions, growing always in poor or gravelly soils, both in woods and glades.

HISTORY—This genus contains two species, this and *G. trifoliata*, which has similar properties, and will be known by its locality, growing on the mountains Alleghany, or north, east and south of them from Canada to Florida, but never west of them. It is a larger plant, with broader folioles, small linear stipules and fewer flowers, but larger. It has been figured by Barton and Bigelow, but resembles this so much as not to need it.

Both blossom in June and July, and are pretty plants, worth cultivation. They had formerly been united to *Spirea*, *Filipendula*, and *Ulmaria*, Mœnch proposed long ago the genus *Gillenia*, but it was only lately adopted. It belongs to the Natural Order of

Senticoses, family *Spireadia*, and to *Icosandria pentagynia*. The *G. Stipulacea* was only lately described. It offers many varieties, 1. *Uniflora*, 2. *Pinnatifida*, 3. *Virgata*, 4. *Variegata*, &c. Cattle do not eat it.

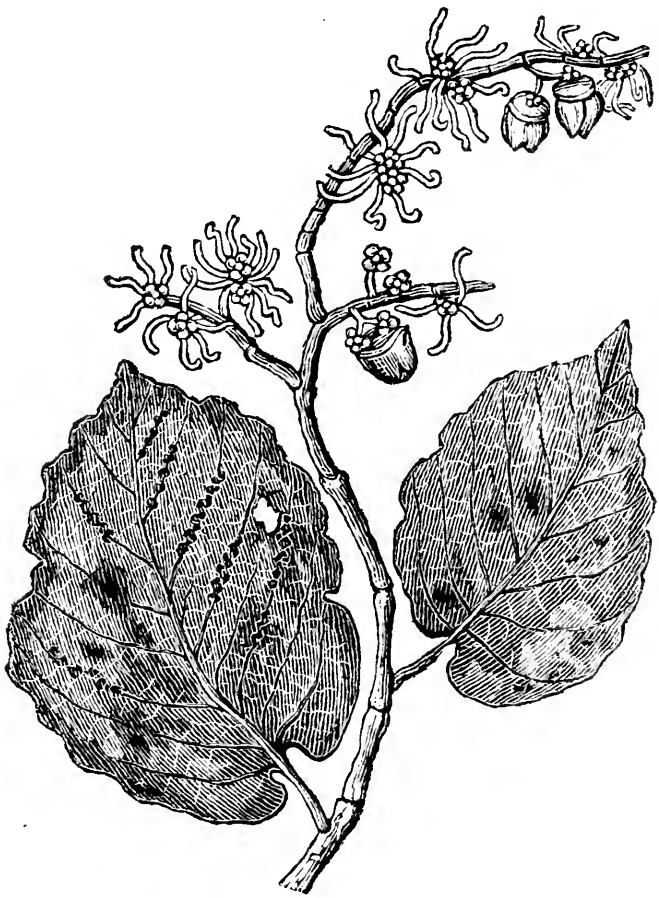
Qualities—Roots scentless, taste bitter but not unpleasant. Containing a resin, extractive, lignine, fecula, amarine, and a coloring matter, which dies the solutions red.

PROPERTIES—Both species are emetic, cathartic, and tonic; but the *G. stipulacea* is by far the best and strongest. It has even happened that the *G. trifoliata* has proved inert, in some cases, when old, or taken from cultivated plants: while the *G. stipulacea* has never failed, and supersedes the Ipecac in common practice throughout the West. It is as mild and efficient, milder than the *Euphorbia corollata*. The roots are collected in the fall, and kept in many stores: the bark of the root is chiefly used, but the woody part is not inert as supposed. The dose is from 15 to 30 grains of the powder. It operates often also as a cathartic. In small doses it becomes a tonic, and is used in intermittents. The Indians employed it, and took larger doses or strong decoctions of it, which operated violently; this practice is yet followed and brings on debility: Eberle has successfully used the *G. trifoliata* in dyspepsia, also in dysentery with opium. It is given in decoction to horses and cattle as a tonic and digestive.

Substitutes—*Euphorbia Sp.*—*Sanguinaria*—Ipecacuana and all the mild Emetics.

No. 45.

HAMAMELIS VIRGINIANA.



WINTER WITCH-HAZEL.

No. 45.

HAMAMELIS VIRGINICA.

English Name—WINTER WITCH HAZEL.
French Name—Hamamelier d'hyver.
German Name—Hexehasel.
Officinal Name—Hamamelis Cortex.
Vulgar Names—Witch hazel, Snapping hazel-nut, Winter bloom, Pistachoe nut, &c.
Authorities—Lin. Mich. Pursh, Cutler, Schoepf, Mitchell, Colden, Catesby, fig. 2. Barton Flora, fig. 78, Elliott, &c.

Genus Hamamelis—Calix four cleft, persistent, with scales at the base. Petals four long and linear. Stamina four opposite to the petals. Filaments broad and short, anthers adnate, two celled, dehiscent by vertical valves, one pistil, two stigmas. Capsule coriaceous nut-like, two celled, two lobed, two valved above, valves cleft: one oblong seed in each cell.

Species St. Virginica—Leaves obovate, obtuse, smooth, base obliquely cordate, margin erose; flowers in small remote clusters, calix and fruit pubescent externally.

DESCRIPTION—A shrub from six to ten feet high, with irregular branches, flexuose and knotty: bark smooth grey, with brown dots. Leaves rather large, smooth, alternate, petiolate, obovate, base with a small sinus and unequal lobes, margin with unequal

faint teeth, commonly obtuse, end obtuse, nerves prominent.

Flowers on short pedicels, clustered three to five together, in several places along the branches. Calix small, but enlarging with the fruit, with three or four scales at the base, divided into four thick oval pubescent segments. Petals yellow, much longer, linear, obtuse, often undulate or revolute. Stamina four opposed to petals, shorter than the calix. Pistil oval central, a short style, two stigmas obtuse. Fruit a nut-like Capsule, similar to a hazel-nut; but bilobed and split above, pubescent, yellowish, with two cells containing each an oblong black seed, with a broad arilla at the base. This capsule is one year ripening, and opens with elasticity and instantaneously with a noise, by two half valves, throwing the seeds off.

Locality—From New England to Carolina and Ohio, commonly on hills and mountains, near stony banks of streams. Rare in plains and alluvions.

HISTORY—This is a very singular Genus, formed by Linnæus with the *Trilopus* of Mitchell, which name he ought not to have changed for the actual, which is the Greek name of the *Mespilus* or *Medlar tree*. He knew only one species, several are now known, which are sometimes polygamous, monoical and even dioical. They all blossom in winter, when no other tree is in bloom; the blossoms last from October to February. The fruits stand on the whole year, till next fall, and then explode successively with a noise, like *Hura crepitans*, scattering the seeds around. These seeds are eaten by the Indians,

and in the South where they are called erroneously Pistachoe nuts, although quite unlike the *Pistacia vera* or true Pistachoe of the Mediterranean. They are similar in shape to the esculent Pine seeds of *Pinus picea*, cylindrical, shining black outside, white and farinaceous inside, rather oily and palatable.

The shrub resembles very much in the appearance of the leaves and nuts, the common hazelnut, *Corylus Americana;* but the blossoms are totally different. It has become in the United States the Witch hazel, affording the divining rods, employed by the adepts of the occult arts, to find or pretend to find Water, Ores, Salt, &c. under ground. The *Alnus* and *Corylus* are often substituted, a forked branch is used, the two branches held in both hands; when and where the point drops, the springs or metals sought for, are said to be! A belief in this vain practice is as yet widely spread.

It belongs to the Natural Order of BERBERIDES, distinguished by opposite petals and stamina, and to the section or family with capsular fruit like *Jeffersonia*. Also to *Tetrandria monogynia* of Linnæus.

QUALITIES—The bark and leaves are somewhat bitter, very astringent, leaving a sweetish pungent taste: The smell is not unpleasant. It has not been analyzed as yet, but probably contains tannin, amarine, extractive, and an essential oil.

PROPERTIES—Sedative, astringent, tonic, discutient, &c. The Indians value this shrub highly, and it is much used in the North by herbalists. The bark affords an excellent topical application for pain-

ful tumors and piles, external inflammations, sore and inflamed eyes, &c. in cataplasm or poultice or wash. A tea is made with the leaves, and employed for many purposes, in amenorrhea, bowel complaints, pains in the sides, menstrual effusions, bleeding of the stomach, &c. In this last case, the chewed leaves, decoction of the bark or tea of the leaves, are all employed with great advantage. A strong infusion is given in injection for bowel complaints. It is said to be a mild yet efficient astringent in all cases, and a safe substitute of *Statice*, *Myrica* and *Rubus*.

Substitutes—*Conium maculatum*—*Viburnum acerifolium* and *V. dentatum*—*Nymphea odorata Myrica cerifera*—*Agrimonia Eupatorium*—*Geum Sp.*—*Rhus typhinum* and *R. glabrum*—*Statice Caroliniana* and many other mild astringents.

Remarks—All the species of this genus have probably the same properties. In the north the *H. parvifolia* is equally used. It is distinguished by smaller leaves, pubescent beneath, hardly cordate at the base, undulate and sinuate. The shrub is smaller, with blossoms of a brighter yellow, and grows in mountains.

The *H. macrophylla* or Bigleaf Witch hazel, is only found in the Southern mountains, and will be known by its large, rough and round leaves.

No. 46.

HEDEOMA PULEGIOIDES.

AMERICAN PENNYROYAL.

No. 46.

HEDEOMA PULEGIOIDES.

English Name—AMERICAN PENNYROYAL.
French Name—Hedeome Pouliot.
German Name—Poleyblattrige.
Officinal Name—Hedeoma herba.
Vulgar Names—Pennyroyal, Tickweed, Stinking Balm, Squaw-mint, &c.
Synonyms—*Melissa pulegioides* Lin. *Cunila pulegioides* Lin. and many botanists.
Authorities—Lin. Mich. Pursh, Persoon, Kalm, Schoepf, Thacher, Cullen, Big. seq., Duncan, Eberle, Zollickoffer, Chapman, Elliott, B. Barton, W. Barton, M. M. fig. 41.

Genus Hedeoma—Calix bilabiate, ten striated, base gibbose, upper lip trifid, lower with two subulate teeth and ciliated bristles, corolla bilabiate, upper lip nearly entire, lower trilobe, middle lobe obcordate. Two fertile stamina as long as the corolla, two sterile and short. One style, four seeds.

Species H.-pulegioides—Annual, leaves subpetiolate, oblong, acute, subserrate, a little rough. Flowers axillary, verticillate by six, on short pedicels, with two small bracteoles.

DESCRIPTION—Root annual, small, yellowish, branched fibrose. Stem upright, about a foot high, with slender erect branches, terete, pubescent. Leaves

opposite, small, oblong lanceolate or suboval, on short petioles, base attenuated, end subacute, margin with small remote serratures, surface rough or pubescent, nerved and pale beneath.

Flowers all along the branches in axillary whorls of six, nodding, on short pedicels, very small. Calix as above, pubescent. Corolla very small, hardly longer, white, with the lips purple, base slender, then campanulate with two small lips, the upper rounded, seldom notched, the lower with two rounded lateral lobes, and an obcordate middle lobe. Stamina and style filiform, anthers oblong. Stigma lateral acute. Fruit four small oblong seeds in the persistent calix, mouth closed by the ciliated bristles of the lower lip.

Locality—Very common and abundant all over the United States, and in Canada, in dry woods and hills chiefly, but also in plains, alluvions, roads, stony fields. Never in moist soils. No where more abundant than in lime soils or arid grounds.

HISTORY—It was the fate of this plant to be successively united by Linnæus and other botanists to *Melissa* and *Cunila*, until distinguished and named by Persoon, and it is as yet commonly blended, even by medical writers, with the European Pennyroyal or *Mentha pulegium*, which does not grow in America; the shape, smell, and properties being somewhat similar, whence the same vulgar name; but our plant appears to be more efficient.

It belongs to the natural order of Labiate, and to *Diandria monogynia* of Linnæus. It blossoms in summer from July to September. The name of *He-*

deoma means sweet smelling in Greek; the whole plant is scented; but the smell far from agreeable, being strong and graveolent: many persons, however, like it and call it pungent, reviving and pleasant: females are sometimes fond of it as well as of Rue or *Ruta graveolens*, although both very graveolent.

QUALITIES—The smell and taste are very warm, pungent, strong, and hardly aromatic, but pleasant or disagreeable according to different personal affections. The medical principle resides in an essential oil, possessing eminently the same smell and taste.

PROPERTIES—Carminative, resolvent, pectoral, diaphoretic, antispasmodic, menagogue, pellent, stimulant, &c. It is a popular remedy throughout the country for female complaints, suppressed menstruations, hysterics, &c. It is chiefly beneficial in obstructed catamenia, and recent cases of suppressions, given as a sweetened tea, with the pediluvium. Eberle, however, deems its menagogue property problematical, and useful only as a vehicle for other remedies: that he is mistaken, is proved by daily experience. It promotes expectoration in the whooping cough, it alleviates spasms, pains in the hips, and the spasmodic or dyspeptic symptoms of menstruation. Schoepf mentions it for palpitations, fevers and gout; but it is too stimulant in fevers. A warm cataplasm of the herb is useful in severe pains, and thrilling palpitations. Zollickoffer says that it is a valuable medicine in some cases of diarrhea, but which? Some herbalists in the north, employ it extensively for colds, cholics of children, to remove obstruction, warm the stomach

and promote perspiration. Although it affords one of the most popular graveolent tea, there are many other labiate plants which are equivalent to it and more agreeable withal: the best are Mint, Dittany, Balms, Sage, Monarda, Isanthus, &c. The oil is now kept in pharmacies, and often used instead of the infusion, in mixtures, &c.

SUBSTITUTES—*Monarda Sp.—Mentha pulegium and M. piperita—Cunila mariana—Isanthus ceruteus—Ruta graveolens—Salvia officinalis—Melissa nepeta—Juniperus Sp.—Rosmarinus officinalis—Rubia tinctoria—Polygala senega*, &c.

REMARKS—This plant is also frequently used to kill the Ticks, (*Ixodes*) which attach themselves to men, dogs and cattle, in summer. These troublesome animals are found wherever the Hedysarums and Lespedezas or true Tickweeds grow, upon which they breed, but both are unknown in the limestone plains. By rubbing the legs or boots with this plant or its oil, these insects will avoid you, or if they have taken hold, the oil kills them. A strong decoction of the plant is equally convenient, and a strong decoction of Tobacco as good likewise.

No. 47.

HELENIUM AUTUMNALE.

COMMON SNEEZEWORT.

No. 47.

HELENIUM AUTUMNALE.

English Name—COMMON SNEEZEWORT.

French Name—Helenie d'automne.

German Name—Niessenkraut.

Officinal Name—Helenium.

Vulgar Names—Sneezeweed, Sneezewort, Swamp Sunflower, False Sunflower, Yellow Star, Oxeye.

Authorities—Lin. Mich. Pursh. Torrey, Elliott, Cornut, Clayton, Schoepf, B. Barton, W. Bart. ft. fig. 26, Duncan, &c.

Genus Helenium—Perianthe many parted, segments linear. Flowers radiate, rays cuneate trilobe, styliferous, from 15 to 20. Phoranthe hemispherical, naked, chaffy on the margin. Florets complete, four or five cleft. Pappus with five chaffs. Seeds hairy.

Species H. autumnale—Pubescent, Stem corymbose above, winged: leaves lanceolate, serrate, decurrent: peduncles thicker above, rays flat, florets five cleft.

DESCRIPTION—Root perennial, fibrous. Several Stems from three to seven feet high, erect, angular, winged by the decurrent leaves, branched and corymbose above: covered as well as the leaves with a very short and dense pubescence. Leaves glaucous, alternate, sessile, decurrent, lanceolate, acuminate, unequally serrate, dotted by small pits, subtrinervate.

Flowers corymbose, golden yellow, large, one or two inches in diameter. Peduncles axillary, uniflore, with one oval lanceolate bract, clavate or thicker upwards. Perianthe with many unequal linear acute segments. Phoranthe semiglobose, with chaffs near the rays, lanceolate. Rays from five to twenty, spreading flat, or sometimes rather reflexed, shape cuneate, end broad trilobe, middle lobe often smaller. Disk greenish yellow convex, florets small crowded five cleft, with syngenesious stamina, a bifid style, oblong germ, pappus formed by three to five chaffs subulate and awned.

Locality—It grows all over the United States, and from Canada to Texas and Florida, in wet meadows, and Savannas, damp fields, overflowed grounds, banks of streams, &c.

HISTORY—Linnæus has employed the specific name of the *Inula helenium* or Elecampane as a generic one in this instance, owing to a faint resemblance. The *Helenium* was said by the Greeks to have sprung from the tears of the fair Helen. This was once a unique species, but now several others are added, which grow in the Southern States. It belongs to the great Order of Radiate, where it is the type of a small family the *Helenides*: Linnæus puts it in his *Syngenesia superflua.*

It is a fine plant, rather ornamental, and adorning in the fall the meadows with its golden blossoms, appearing from September to November. The Cattle do not touch it. The varieties are 1. *Villosa*, 2. *Pumila*, 3. *Prealta*, &c.

QUALITIES—The plant has hardly any smell: the taste is bitter, and a little pungent or even acrid. It has not been analyzed; but contains amarine, extractive and an oil.

PROPERTIES—Tonic, febrifuge, errhine. Clayton and Schoepf mention its use in intermittents; but it is not extensively employed as yet in fevers: while it is known and employed all over the country as a valuable Errhine. The whole plant reduced to powder act as such; but the flowers and particularly the central florets are powerful sternutatory. A very small pinch of their powder produces a lasting sneezing. The late B. Barton has eminently extolled it, as a substitute to more acrid Errhines, either alone or united to other ingredients. It may be used in diseases of the head, deafness, anavrosis, head-ache, hemicrania, rheumatism or congestions in the head and jaws, &c. The shocks of sneezing are often useful in those cases, when other remedies can hardly avail. This plant has probably many other properties, little known as yet, and deserving investigation.

SUBSTITUTES—As a tonic *Chelone glubra*, and other herbaceous tonics. As an errhine, *Asarum Canadense*, *Sanguinaria canadensis*, *Myrica cerifera*, Tobacco and Cephalic Snuffs. Besides the *Helenium quadridentatum* of Louisiana and Florida, which will be known by its lower leaves pinnatifid, upper entire, and the florets quadrifid or four cleft.

No. 48.

HEPATICA TRILOBA.

English Name—COMMON LIVERWORT.

French Name—Hepatique trilobe.

German Name—Leberkraut.

Officinal Name—Hepatica.

Vulgar Names—Liverweed, Trefoil, Noble Liverwort.

Synonym—*Anemone hepatica* Linn. &c.

Authorities—Linn. Schoepf, Pursh, Torrey, Eaton, Hereford, &c.

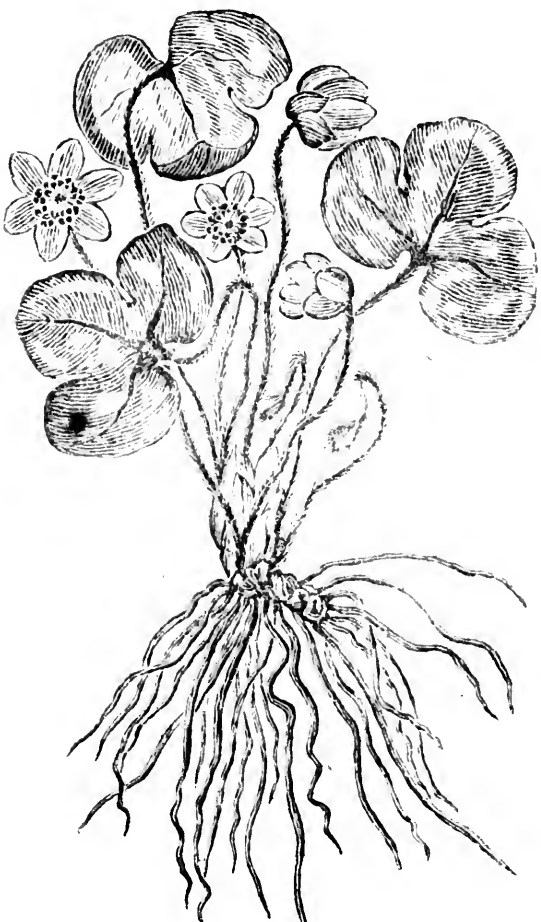
Genus Hepatica—Involucre caliciform, near the flower, persistent, three parted. Perigone corolliform, with six to nine oblong petals. Many short Stamina. Many pistils, Styles short. Seeds awnless achenes.

Species H. triloba—Leaves radical, cordate, three lobed, lobes entire, petioles and scapes equal in length and hairy, scapes uniflora, flowers drooping before the anthesis and pilose.

DESCRIPTION—Root perennial, fibrose, fibres long fasciculate, brown. Leaves all radical, on long hairy petioles, somewhat leathery and partly persistent in winter, base cordate, divided into three equal entire lobes, rounded, obtuse or acute, with obtuse or acute sinuses, nearly smooth, mottled of olivaceous and purplish above, glaucous and purplish beneath. Several scapes equal in length to the petiols, upright,

No. 48.

HEPATICA TRILOBA.



COMMON LIVERWORT.

four to eight inches long, invested at the base with several membranaceous sheaths, hairy, round, bearing a single flower.

Flowers terminal, drooping at first, spreading when unfolded. Involucre resembling a calix, very hairy, hairs grey and long, segments very deep, oval, entire, obtuse. Perigone like a Corolla bluish, purplish or white, sepals elliptic obtuse, equal, but in two or three series. Filaments subulate, anthers elliptic, pale yellow. Pistils and seeds oval, acute.

Locality—A boreal plant, native of the northern parts of Europe, Asia and America, spreading in this last continent from Labrador to Virginia and the Pacific Ocean, common in woods, hills and mountains of the United States from New England to Kentucky.

HISTORY—A pretty vernal plant, the leaves stand the winter, and early in the spring the flowers come out, even when snow is yet falling: they last from March to May, are rather pretty and deserving cultivation. The varieties are 1. *Albiflora*. 2. *Acutiloba*. 3. *Parviflora*, flowers half the usual size and blue. In Kentucky, perhaps a peculiar species.

Tournefort established this genus, Linnæus wrongly blended it with *Anemone*, it has again been separated lately. The name derives from its hepatic properties. It belongs to the Natural Order of Adnates or Ranunculaceous, and to *Polyandria polygynia*.

Qualities—Scentless and nearly insipid, not bitter; but a little astringent and mucilaginous. It contains tannin, mucilage, extractive, &c.

PROPERTIES—Subtonic, subastringent, hepatic, deobstruent, pectoral, demulcent. It was known to the ancients as a medical plant, and Linnæus has it in his Materia Medica; but it had fallen into disuse, its properties being very mild. It was formerly used in fevers, liver complaints, indigestion, cachexy, hypochondria and hernia. It has lately been brought to notice in America for hemoptysis and coughs, it has been used in Virginia with benefit in the form of a strong infusion, drunk cold. It may be serviceable in hepatisis and hepatic phthisis, as well as all complaints arising from dyspepsic and hypochondriac affections; it may be used as a tea, warm or cold and ad-libitum; but it has no effect on the lungs beyond that of a mild demulcent astringent.

SUBSTITUTES—*Agrimonia*—*Geum Sp.*—*Lycopus Virginicus*—*Tussilago*—*Symphytum*—*Leontodon taraxacum* or Dandelion,—*Sisymbrium* or Water Cresses, &c.

No. 49.

HEUCHERA ACERIFOLIA.

MAPLELEAF ALUMROOT.

No. 49.

HEUCHERA ACERIFOLIA.

English Name—MAPLELEAF ALUMROOT.
French Name—Heuchere Erable.
German Name—Alaunwurzel.
Officinal Name—Heuchera radix.
Vulgar Names—Alumroot, Sanicle, Ground Maple, Cliffweed, Split-rock, &c.
Authorities for the Genus—Lin. Mich. Pursh, Nuttal, Eaton, Torrey, Elliott, Dispens. Murray, Stokes, B. Barton, W. Barton, Bigelow seq., Zollickoffer, Coxe, &c.

Genus Heuchera—Calix persistent, campanulate, five cleft. Five entire equal lanceolate petals inserted on the calix. Five stamina inserted on the calix. Pistil central, free, round, cleft, two styles. Capsule bifid, bilocular, many seeded. *Leaves radical, cordate and jagged, with radiating nerves, scape with a terminal panicle of flowers.*

Species H. Acerifolia—Petioles hirsute, leaves smooth, glaucous beneath, acutely five cleft, unequally toothed, teeth mucronate: scape smooth, panicle elongated, laxiflore, minutiflore, petals short, stamina exserted.

DESCRIPTION—Root perennial, yellowish, horizontal, crooked, with few fibres. Radical leaves on long petioles, slender and covered with short stiff

hairs: shaped like those of the maple trees, base deeply and acutely cordate, circumference acutely five cleft, sometimes seven cleft or even nine cleft; segments angular, acute, unequally toothed, teeth short, rounded, mucronate; only five branched nerves: both surfaces smooth, upper green, lower glaucous. Scapes round, smooth, fistulose, straight, one or two feet high.

Flowers very small, forming a long panicle, occupying the upper half of the scape, cylindrical, but loose, small pinnatifid or pectinated bracts at the base of the branches, which are scattered and irregularly divided with small subulate bracteoles at the lower divisions: pedicels longer than the flower. Calix with five acute teeth. Petals lanceolate, flesh colored, filaments subulate, erect, jutting out, anthers rounded. Pistil bifid with two long styles, stigma obtuse. Capsule with two beaks, opening inside of the beaks, with two cells formed by the involute valves. Many small black seeds.

Locality—In the mountains, hills, cliffs and fissures of rocks in Kentucky, Tennessee, West Virginia, and Pennsylvania, Ohio, Maryland, &c.

HISTORY—All the species of this very natural genus have the same properties, and are used indiscriminately under the name of Alumroot: they shall therefore be united in this article. I have thought preferable to figure one of my new species, rather than to give another figure of the most common kind, wrongly called *H. americana.* Since the *H. dichotoma* has been removed from this genus, all the known

species are North American, and possess the same peculiar habit.

Linnæus only knew one species, Michaux two, Nuttal three, Pursh five, and I know seven, besides many varieties, without being sure of having seen all the species of Pursh and Elliott. As this genus is yet in a great confusion and uncertainty, I shall mention here only those which I have seen: they are besides the actual.

1. *H. Viscida* of Pursh, (or *H. cortusa* of Michaux, the *H. americana* of Linnæus, &c. and W. Bart. fig. 40.) Vicidly pubescent, scapes and leaves a little scabrous, leaves oblong cordate ciliate, with many rounded lobes, and unequal mucronate teeth, surface concolor: panicle short and laxiflore, calix short, obtuse, petals short lanceolate, stamina exserted.—The most common species east of the Alleghany mountains, rare to the west: petals rose. The varieties are 1. *Macrophyllo*, 2. *Maculata*, 3. *Scabra*, &c.

2. *H. Villosa* of Michaux, (or *H. hispida* of Pursh.) Entirely hairy, leaves cordate, with acute lobes, panicle laxiflore, minutiflore, pedicels filiform, calix acute, petals short, &c.—In the Alleghany mountains of Virginia, Carolina, &c. Flowers very small, petals white.

3. *H. Pulverulenta* (or *H. pubescens* of Pursh, &c.) Leaves pulverulent-pubescent, cordate, with acute lobes, toothed, smooth beneath; scape smooth below, rough above, panicle crowded, petals longer than calix, stamina hardly exserted.—In the mountains from New

England to Pennsylvania: petals red and yellow. Var. 1. *Rubra*, 2. *Grandiflora*, &c.

4. *H. Squamosa* Raf. Petioles pilose, leaves subhirsute, ciliate, cordate, acutely seven lobed, denticulate, glaucous beneath: scapes hairy, with oval distant scales; panicle short or oval, crowded, and scaly, pedicels short, calix obtuse, stamina exserted.—In the mountains of Maryland and Virginia, the Cumberland mountains of Kentucky, &c. Leaves rather small, flowers middle size. Var. 1. *Pumita*, 2. *Laxiflora*, 3. *Confertiflora*.

5. *H. Reniformis* Raf. Petioles smooth, leaves reniform rounded, faintly lobed and toothed, ciliolate, concolor, sub-hirsute above, smooth beneath: scapes rough, panicle elongated, grandiflore, laxiflore, pedicels filiform, calix urceolate obtuse, petals and stamina exserted.—In the Cumberland mountains and Knob hills of Kentucky: leaves and flowers large, petals white.

6. *H. Glauca* Raf. Smooth, glaucous, leaves cordate obtusely lobed, mucronate-denticulate; panicle laxiflore, elongated, minutiflore, petals and stamina short. In the Cumberland mountains.

They all grow among rocks and near streams, blossoming in June and July. The genus has been dedicated to Heucher, a German botanist. It belongs to the natural order of Dicères or Saxifragides, differing from *Saxifraga* merely by having five instead of ten stamina, and to *Pentandria Digynia* of L.

Qualities—The whole plants are astringent; but the roots strongly so, and biting on the tongue like

alum, but nearly scentless. They contain nearly the same elements as *Geranium maculatum*, but more tannin and acid.

PROPERTIES—The root of these plants is a powerful astringent styptic, antiseptic, vulnerary and detergent, probably equal to *Geranium maculatum* and *Spirea tomentosa*. It was used by the Indians, and is still used in Kentucky and the Alleghany mountains, in powder, as an external remedy in sores, wounds, ulcers, and even cancers: it is one of the bases of the cancer powders of Empirics; united to *Orobanche*, *Hydrastis*, &c. It is employed as a styptic in internal and external hemorrhagy, bleeding of the nose, foul or indolent ulcers, wounds and cuts. It is seldom taken internally the taste being so intensively astringent; but it promises to be useful even in very small doses, whenever astringents are indicated. Coxe says that the Alumroot has been sold for the *Colchicum*, to which it bears no resemblance in form nor properties.

SUBSTITUTES—*Geranium*, *Geum*, *Spirea*, *Statice Sp.* and other powerful astringents.

No. 50.

HUMULUS LUPULUS.

English Name—COMMON HOP.
French Name—Houblon commun.
German Name—Hopfen.
Officinal Names—Lupuli coni, humuli strobili.
Vulgar Names—Hops, Wild-hops, Hopvine.
Authorities——Lin. Pursh, Nuttal, A. Ives, Schoepf, Treaks, Bryorly, Bigsby, many Dispens. Alibert, Coxe, Eberle, Maton, Roches, Zollickoffer, Bigelow, fig. 60 and Seq.

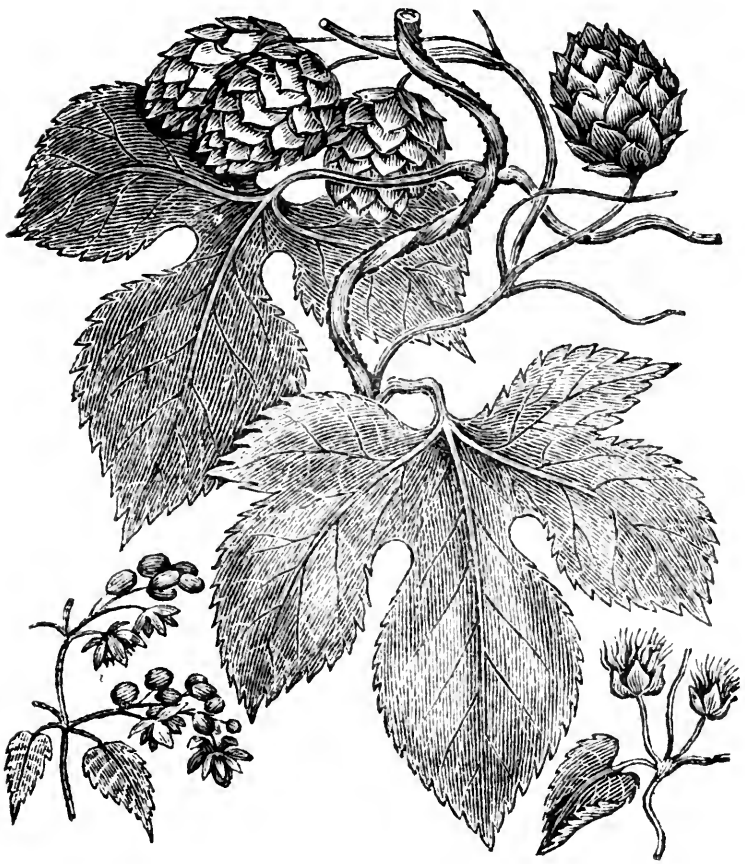
Genus Humulus—Dioical, Staminate flowers with a five leaved perigone, Stamina five, anthers bipore. Pistilate flowers strobilate: bracts biflore, perigone one leaved, persistent entire, concave, involute. One pistil, two styles, one seed.

Species H. lupulus—Stem twining and rough, leaves opposite, petiolate, cordate, three or five lobed, acute, sharply serrate, rough: staminate flowers panicled, fertile strobiles axillary peduncled.

DESCRIPTION—Root perennial. Stem annual, forming a climbing vine, twining from right to left, angular, rough with minute reflexed prickles. Leaves opposite, petiols crooked, smaller and floral leaves cordate, acuminate, serrate: the main leaves nearly palmate, trilobe, sometimes five lobe; lobes large, oval acute, sharply serrate; sinusses obtuse, without

No. 50.

HUMULUS LUPULUS.



COMMON HOPS.

teeth; surface very rough with three main nerves and many veins.

Flowers numerous and greenish. The staminate on different individuals, forming axillary panicles, with two or four bracts, reflexed, opposite, petiolate, oval: each flower peduncled. Perigone caliciform, with five oblong obtuse concave and spreading sepals: five stamina, filaments short, anthers oblong, opening by two terminal pores. Pistilate flowers forming oval, opposite, axillary, drooping and peduncled strobiles or cones. Scales imbricate, oval, acute, tubular at the base, each covering two sessile flowers. Perigone (Corolla of Linnæus) shorter than the scales, lateral, oval obtuse, infolding the pistil by the edges. Germen rounded, compressed, two short styles, two long subulate and downy stigmas. Each flower produces a single round seed.

Locality—Native of Europe and America, and cultivated also in both continents. Schoepf found it wild in Virginia, Nuttal on the Missouri, and I have seen it spontaneous from New York to Kentucky in groves, thickets, coppices and banks of streams.

HISTORY—This vine is ornamental and useful. It is extensively cultivated wherever malt liquors are used, and forms a profitable branch of agriculture. The fertile plants alone are raised, since the medical and economical parts are the strobiles of the seeds. The young shoots, when emerging from the ground, are however eaten like Asparagus in Italy and Germany. The fibres of the vine are also made into coarse cloth in Sweden and England. The blossoms

appear in the summer, and although uncolored are not devoid of elegance.

Humulus belongs to the Natural Order SCABRIDES or URTICIDES, and to *Dioecia pentandria*. It has but this species, both names are ancient.

QUALITIES—The whole plant, but particularly the strobiles have a fragrant sub-narcotic smell, and a bitter, astringent, aromatic taste. A. Ives has shown that this taste and smell reside in a fine impalpable yellow powder, sprinkled over the fertile plants, and chiefly on the strobiles, which may be separated by threshing and sifting. This powder has been called *Lupulin*, although it is not a proximate principle, but a dry secretion from the plant, and a compound substance containing the active principles and properties. The *Lupulin* contains out of 120 parts, 46 of lignin, 36 resin, 12 wax, 11 amarina, 10 extractive, 5 tannin, besides two per cent. of a singular essential oil, very volatile, partly soluble in water, very acrid, and having the narcotic smell of the Hop. The *Lupulin* is very inflammable, it becomes soft and adhesive by handling: the strobiles contains one-sixth of their weight of it, and it may be available in brewing like the hops: one pound being equal to six pounds of hops.

PROPERTIES—The whole plant, but chiefly the Strobiles and the Lupulin are tonic, narcotic, phantastic, anodyne, sedative, alterative, astringent, antilithic, diuretic, corroborant, &c. The strobiles or hops have long been an ingredient of porter, ale and other malt liquors, to which they impart a bitter and

aromatic flavor, besides a small share of their properties; but by the habitual use of these liquors all the good effects are destroyed. The hop-beer made with molasses, hops and yeast, is a better liquor still, and an agreeable, refreshing, tonic beverage.

As a medicinal article hops have been praised by many physicians, and employed in Nephritis, Gravel, Gout, Phrenitis, Alopecia, Luxations, articular Rheumatism, Dyspepsia, Scrophula, Rachitis, Eresypelas, Debility, Strangury, Hysteric and Nervous complaints, Cancer, &c. As tonic, stomachic and corroborant, they are available in diseases depending on debility or a loss of tone in the stomach; but their powers are weak in this as well as all the other properties ascribed to them, which, however, may render them useful when mild remedies are required. As a narcotic and sedative they operate mildly, and are often preferable to opium: they induce sleep without producing the bad effects of opium. Even the external application of hops, produces the same effect, and a pillow of hops is a popular mode of promoting sleep. Poultices and fomentations of hops are common applications for painful swellings. Their antilithic and diuretic property is questionable, they can at utmost act as palliative, and are sometimes injurious; but available in the strangury produced by Cantharides. Besides allaying pain and producing sleep, hops have been found to reduce pulsations from 96 to 60, while rendering the pulse more firm. They are useful in the weakness and watchfulness of hysteric patients. An ointment of hops is a palliative in the

last stage of Cancer. They are said to act as antiseptic and corroborant in bowel complaints. Some physicians consider them as general alterative of the system. Schoepf mentions the seeds as used in Obstipation. Zollickoffer has used the flowers to relieve the pains after parturition.

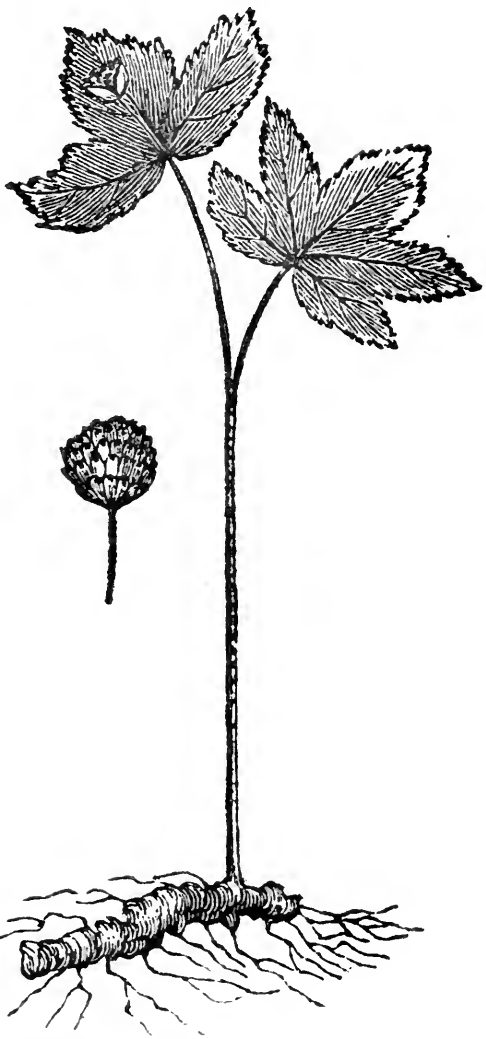
Many preparations are made with them; the tincture and extract of hops were formerly most used. Now the pills, syrup, infusion, tincture, extract and ointment of Lupulin are employed. Boiling water and alcohol dissolve the Lupulin. The doses must be small and gradually increased, beginning with one grain of Lupulin, four of the extract, a tea spoonful of the tincture, or two ounces of the infusion. An over dose produces sore throat, nausea, purging, tremor, head ache, &c.

Substitutes—The mild aromatic tonics and narcotics; but none are similar, nor combine the same number of properties, the *Lycopus virginicus* alone comes nearest to it.

Remarks—The malt liquors brewed in the United States, instead of being a wholesome beverage, are often rendered deleterious by the substitution or addition of bitter and narcotic ingredients: the harmless substitutes to Hops are, Liquorice, Wormwood, Quassia, *Teucrium Virginicum*, &c. but *Datura Stramonium*, Cocculus, Aloe, &c. that have been added in Pittsburg and elsewhere, are dangerous, pernicious or useless ingredients.

No. 51.

HYDRASTIS CANADENSIS.



YELLOW EYEROOT.

No. 51.

HYDRASTIS CANADENSIS.

English Name—YELLOW PUCOON.

French Name—Hydraste du Canada.

German Name—Gelb Puckuhn.

Officinal Name—Hydrastis radix.

Vulgar Names—Yellowroot, Ground Raspberry, Yellowpaint, Golden Seal, Orange root, Indian paint, Eyebalm, &c.

Synonyms—*Warnera Canadensis* Miller—*Hydrophyllum verum* Linn. *Hydrastis* Ellis.

Authorities—Linn. Mich. Pursh, Miller, Elliot, Eaton, Torrey, Stokes, Coxe, B. Barton, W. Barton, fig. 26, bad.

Genus Hydrastis—Perigone simple, petaloid, three leaved, caducous. Stamina many, unequal, linear. Pistils many forming an ovate head, Styles very short, stigmas compressed. Fruit a compound berry, formed by acines or fleshy seeds.

Species *H. Canadensis*—Stem two leaved, uniflore: leaves unequal, alterne, lower petiolate, upper sessile, palmate, cordate, three to seven lobed, lobes acute, unequally serrate; flower terminal on a short peduncle.

DESCRIPTION—Root perennial, of a bright yellow, tortuose, knobby, wrinkled, with many long fibres. Stem a foot high or less, simple, straight,

round, pubescent, base naked, top with two unequal alterne leaves. First leaf petiolate, cordate, palmate, five or seven lobed, sinuses oblong and obtuse, lobes oval, unequal, acute, with irregular sharp serratures, five branched nerves. The upper or second leaf similar, but sessile and commonly trilobe. These leaves are not quite expanded when the blossoms appears.

Flowers single terminal, on a peduncle shorter than the upper leaf. Three petals or petaloid leaves, flesh or rose colored, oval, obtuse, equal. Many unequal filaments, shorter than the petals, linear and compressed; anthers oblong, obtuse, compressed. Many Pistils oval, crowded forming an oval head, styles very short, stigma dilated, compressed. Berry red and oval, formed by many oblong grains or acines; fleshy, obtuse, muricated by the persistent styles, each one seeded, seeds oblong.

Locality—From Canada and Maine to Carolina and Tennessee, in rich shady woods, on the banks of streams, sides of hills, deep valleys: very common in West Kentucky, Indiana, Ohio, &c., rare in limestone plains.

HISTORY—A pretty and singular plant, easily known by its habit. It blossoms very early in the spring in March and April, and the petals are so caducous and fugaceous that they fall off, as soon as the blossoms expands, leaving the Stamina and pistils bare. The fruit ripens in May, and is very much like a Raspberry of a bright red color; but scarcely edible.

Linnæus knew so little of this plant, that he united

it at first with *Hydrophyllum!* he afterwards adopted the name *Hydrastis* of Ellis, which is a very bad name meaning *imbibing water*, while this plant is not at all aquatic. The name of Miller *Warnera* would have been better, and I should have adopted this last and called it *Warnera diphylla* or *tinctoria* if established errors were not so difficult to correct. The vulgar names of this plant are also various, and common to many others, yellow root is a name given to ten or twelve plants, *Jeffersonia, Coptis, Xanthorhiza,* &c. Pucoon is an Indian name for all roots dying red, orange or yellow, such as *Sanguinaria, Batschia, Galium, Ceanothus,* &c. ; but this is their best yellow Pucoon, affording a juice of a brilliant yellow color, which they use to stain skins and clothing; it may become a valuable dye.

Hydrastis belongs to the RACUNCULACEOUS Order where it forms a very distinct genus, by its berry like seeds. Also to *Polyandria polygynia.*

QUALITIES—The root is only used, it is juicy when fresh, and loses two thirds of its weight by drying. The taste is exceedingly bitter, rather pungent and nauseous. The smell is strong and virose. It contains Amarine, Extractive, several salts, and a peculiar principle *Hydrastin* of a yellow color.

PROPERTIES—Tonic, ophthalmic, detergent, &c. This plant is much used in Ohio, Kentucky, &c. for diseases of the eyes, the juice or an infusion are used as a wash, in sore or inflamed eyes. It is considered a specific by the Indians for that disorder; they also employ it for sore legs, and many external

complaints, as a topical tonic. Internally it is used as a bitter tonic, in infusion or tincture in disorders of the stomach, the liver, &c., and is equivalent to *Aletris* and *Coptis*. It is said to enter into compound remedies for the Cancer, acting as a mild detergent tonic, and the Cherokees are supposed to use it in that disease; but better detergents are known. The properties of this plant are not yet fully known, it appears to be slightly narcotic and available in many other disorders. Some Indians employ it as a diuretic, stimulant and escharotic, using the powder for blistering, and the infusion for the Dropsy.

Substitutes—*Jeffersonia binata—Coptis trifolia Xanthorhiza, Aletris, Sanguinaria, Sigillaria, Frasera, Menyanthes*, &c. But none of these is so efficacious for sore eyes, except perhaps the *Jeffersonia*. For Cancer *Viburnum dentatum, Rumex* and *Orobanche*.

No. 52.

HYOSCIAMUS NIGER.

BLACK HENBANE.

No. 52.

HYOSCIAMUS NIGER.

English Name—BLACK HENBANE.

French Name—Jusquiame noire.

German Name—Schwarz Bilsenkraut.

Officinal Name—Hyosciamus.

Vulgar Names—Henbane, Poison-Tobacco, Stinking Nightshade, &c.

Authorities—Lin. Pursh, Eaton, Torrey, Cullen, Murray, Fothergill, Kinglake, Withering, Schoepf, Thacher, Duncan, Coxe, and all Dispens. Eberle, A. Ives, Woodville fig. 52, Bigelow fig. 17 and seq.

Genus Hyosciamus—Calix persistent, urceolate, with five unequal teeth. Corolla funnel shaped, with five unequal lobes. Stamina five, unequal. Pistil oval, stile filiform declinate, stigma obtuse. Capsule two celled, many seeded, operculate.

Species *H. niger*—Viscid hairy, leaves clasping, lower oval oblong, acute, sinuate or undulate: flowers unilateral, sessile, calix with sharp teeth, corolla reticulate, with rounded lobes.

DESCRIPTION—Root biennial, fusiform, whitish. The whole plant glaucous, hairy, glutinous, lurid, and fetid. Stem one or two feet high, stiff, round, branched. Radical or first year leaves spread on the ground, oval or oblong, undulate, contorted, acute, sessile, sinuated by large acute unequal teeth, nerve thick and

branched. Lower leaves of the stem similar, crowded, alterne, clasping: upper leaves smaller, narrower, nearly entire.

Flowers forming unilateral rows on the branches, extra axillary and opposed to the leaves. Calix urceolate with five short acute and stiff segments. Corolla irregular, funnel shaped, with five unequal, spreading, rounded and entire lobes, with acute sinuses: this corolla is of a dingy yellow, with a pretty net work of purple veins. Stamina inserted in the tube of the corolla; filaments filiform unequal; anthers oblong, large, yellow. Style slender, longer than stamina, with an obtuse stigma. Capsule rounded, invested by the calix, two celled, opening by a circular lid. Seeds numerous, unequal, small, oblong, brownish.

Locality—In the Northern and Eastern States only, from Nova Scotia to Rhode Island, and extending West to New York and Canada: very rare in Ohio and Pennsylvania; unknown in the South. It is supposed to be a naturalized plant, being found merely near houses, roads, rubbish, in old fields and gardens. It is properly an European plant, scattered all over Europe and extending to Asia.

HISTORY—This genus belongs to the natural order of Lurides, and family *Verbascides*, having irregular corolla or stamina, and capsular fruits. Also to *Pentandria monogynia* of Linnæus.

It was known to the ancients as a violent narcotic poison; horses, cattle, deer and swine eat it with impunity, but it poisons rats. The appearance is lurid, the smell offensive and disgusting: there is therefore

little danger of using it inadvertantly. The whole plant, roots and leaves, produce the usual effects of narcotics. It blossoms in June and July. The seeds are said to have the property of keeping long under ground, and germinating whenever brought to light.

QUALITIES—The taste is insipid, slightly acrid and mucilaginous; but the smell is virose, rank, strong, fetid, pernicious and narcotic, which, however, is lost by exsiccation: when burnt it smells like Tobacco. It contains resin, mucilage, extractive, gallic acid, nitrates and other salts, besides *Hyosciam* an alkaline and crystalline active principle, which does not decompose by red heat. Yet decoction is said to destroy the narcotic power of this plant, water and diluted alcohol extract it.

PROPERTIES—Narcotic, phantastic, phrenetic, anodyne, antispasmodic, repellent, discutient, &c. The whole plant may be used; but the seeds contain more *Hyosciam.* Externally the bruised leaves are employed in cataplasm or an ointment made of them: while internally the extract and tincture are chiefly used. The extract ought to be made with the inspissated juice without boiling, the doses are from one to ten grains. This plant operates as a powerful narcotic, and if taken in large doses, it produces drowsiness, intense thirst, anxiety, head ache, irregular hard pulse, vertigo, intoxication, delirium, dilatation of the pupil, difficulty of breathing, aphonia, trismus, coma, a falling sensation, risus sardonicus, double vision or blindness, convulsions, apoplexy, loss of speech, cold extremities, blue face, typhomania, carphologia, gan-

grene, and death. A single dose of one grain has even produced delirium in nervous persons. The root having been mistaken and eaten for Parsnip, has caused many of these alarming symptoms: the remedies are vegetable acids, sulphate of iron, &c. which neutralize the poison, and emetics which discharge it.

The internal use of this poison has been recommended in epilepsy, hemoptysis, colica pictorum, rheumatism, hysteria, mania, melancholy, trismus, palpitations, spasms, arthritis, glandular swellings, obstinate ulcerations, asthma, spasmodic coughs, tic douleureux, &c. by many physicians, and deemed a good substitute to opium and stramonium in most cases; but it is not so safe nor certain, and far less uniform in its operation: the smallest doses are apt to produce nausea, head ache, laborious sleep, confusion of ideas and even delirium. The stomach is inflamed and evinces dark gangrenous spots when death follows overdoses, therefore it must be considered as one of the most dangerous narcotics. It ought to be handled by experienced physicians only, and always begun by minute doses gradually increased. It may be preferable to opium in some cases, as it is rather laxative than constipating, and does not stimulate the body. It has often failed in epilepsy and convulsions. It acts better in spasmodic coughs, the leaves are directed to be simmered in olive or almond oil, and the oil used in emulsions. It is highly praised in Tic united to Valerian and Oxide of Zinc. It has been found useful in some puerperal complaints, &c.

The external use of Henbane is more safe, and equal

to that of Stramonium. It may be safely employed in painful swellings, schirrous or scrofulous or cancerous ulcers, inflamed piles, indolent tumors or milk indurations of the breast, wandering rheumatic pains, inflamed eyes, spasms of the bowels; inflammation of the kidneys, urethra, bowels, testicles, &c.; in chordee, blind piles, and all painful external affections, as a very efficient topical anodyne. The fresh or powdered leaves are used as well as poultices with bread and milk, or liniments in wax and oil. Injections of it for bowel complaints ought to be given in decoction of milk. The extract has been used to prepare for ophthalmic operations, by dilating the pupil, contracting the iris and diminishing sensibility. The smoke of the leaves and seeds, directed by a funnel to a carious tooth, is said to cure odontalgy; but the practice may be deleterious and attended with danger.

Substitutes—*Datura Stramonium*—*Atropa belladonna*—*Solanum Sp.*—*Conium*—*Cicuta*—Tobacco, Opium and other powerful narcotics. The *Hyosciamus albus* of Europe is a milder equivalent, as well as *Humulus* or hops.